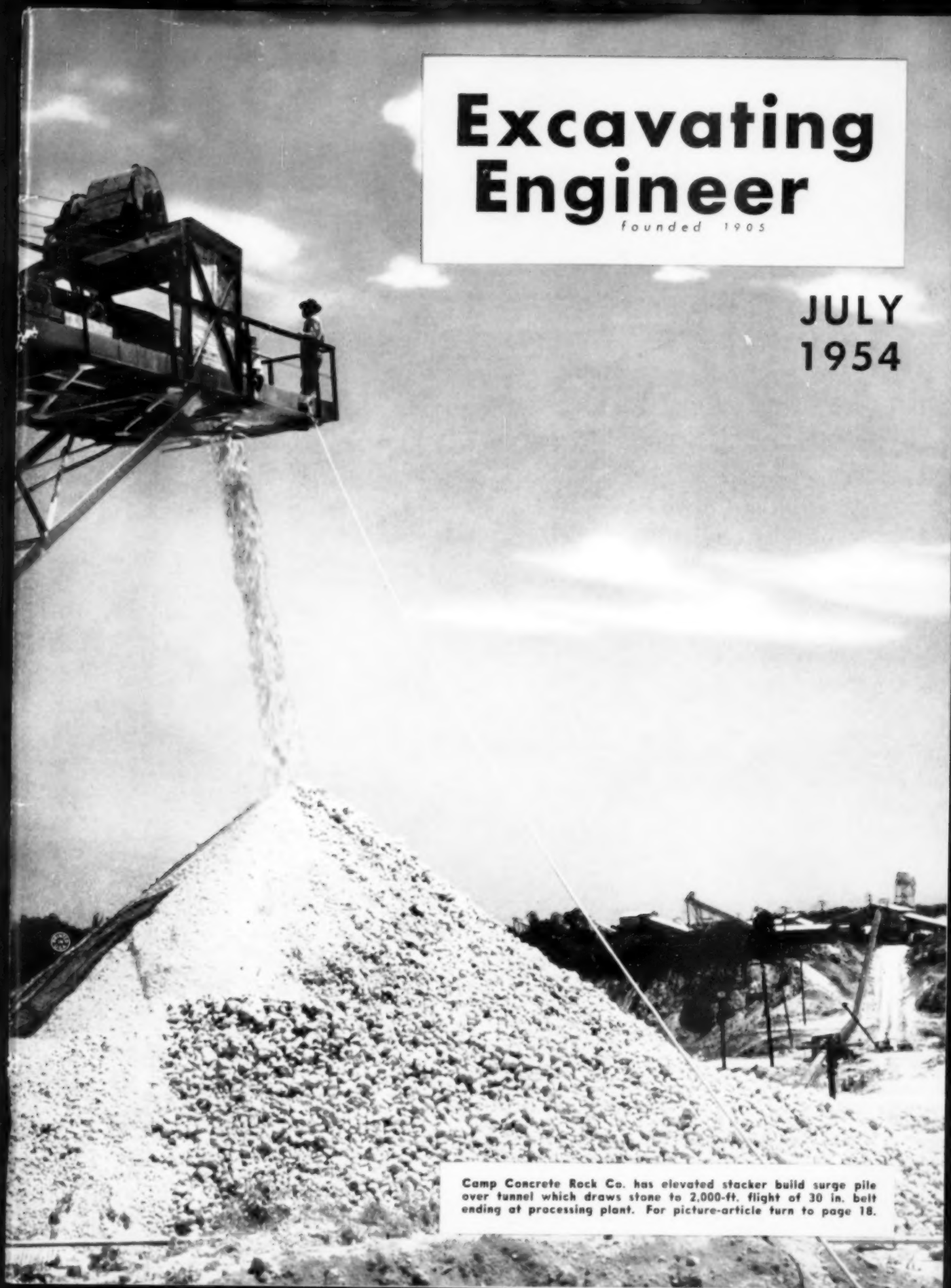
Excavating Engineer

founded 1905

JULY
1954



Camp Concrete Rock Co. has elevated stacker build surge pile over tunnel which draws stone to 2,000-ft. flight of 30 in. belt ending at processing plant. For picture-article turn to page 18.

WRIST-ACTION DIPPER

GIVES NEW ANGLE TO TRENCH DIGGING, ADDS 50% MORE POWER!

Note how wrist action brings dipper mouth in "face-up" position — helps keep big loads from spilling. Wrist-action dipper is available in 18-in. and 12-in. dipper widths.

BUCYRUS-ERIE OFFERS another outstanding feature in dragshovel performance — the wrist-action dipper. Dipper is hinged at lower end of dragshovel handle and rotates in a vertical plane through an arc of 65 degrees, from a position 25 degrees ahead of handle to 40 degrees behind it.

Wrist action permits operator to vary the dipper's position so that dipper teeth bite into ground at best digging angle. You not only get bigger loads but also less spillage because dipper can be rotated to best carrying position. Wrist action provides these additional advantages, too:

1. Actual increase of 50% more power delivered at dipper lip — means up to 6 tons of tooth force.

2. The wrist-action Hydrohoe can dig a vertical wall or short, deep trenches (deeper than they are long) with virtually no hand work; dig column footings; cut trenches 12 to 24 inches wide by as much as 13 feet deep.

3. By working wrist action along with boom telescope, operator can pry out rocks and expose buried pipe with far less danger of pipe damage.

4. Wrist-action dipper rotates past stationary door providing automatic ejection of sticky materials — results in more and bigger payloads.

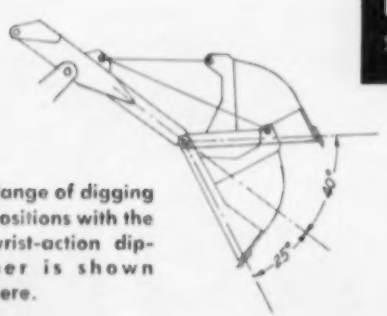
5. Over-all performance is improved by increasing power available at dipper. You have to see this wrist-action dipper in operation to see how it bites in and pries its way through tough clay. It's a real time and money saver.

BUCYRUS ERIE

QUICKLY CONVERTIBLE TO HYDROCRANE IN FIELD

The hoe boom is quickly convertible to crane front end right in the field. With telescoping crane boom this machine has proved outstanding for unloading and laying pipe. Owners say there's nothing like it on pipe handling work.

Get full details on the new Hydrohoe wrist-action dipper and the versatile Hydrocrane. Learn how attachments can be interchanged in minutes. Send coupon today.



Range of digging positions with the wrist-action dipper is shown here.

Bucyrus-Erie Company
South Milwaukee, Wisconsin

Gentlemen:
Please send me details on the new Hydrohoe ☐
Hydrocrane ☐

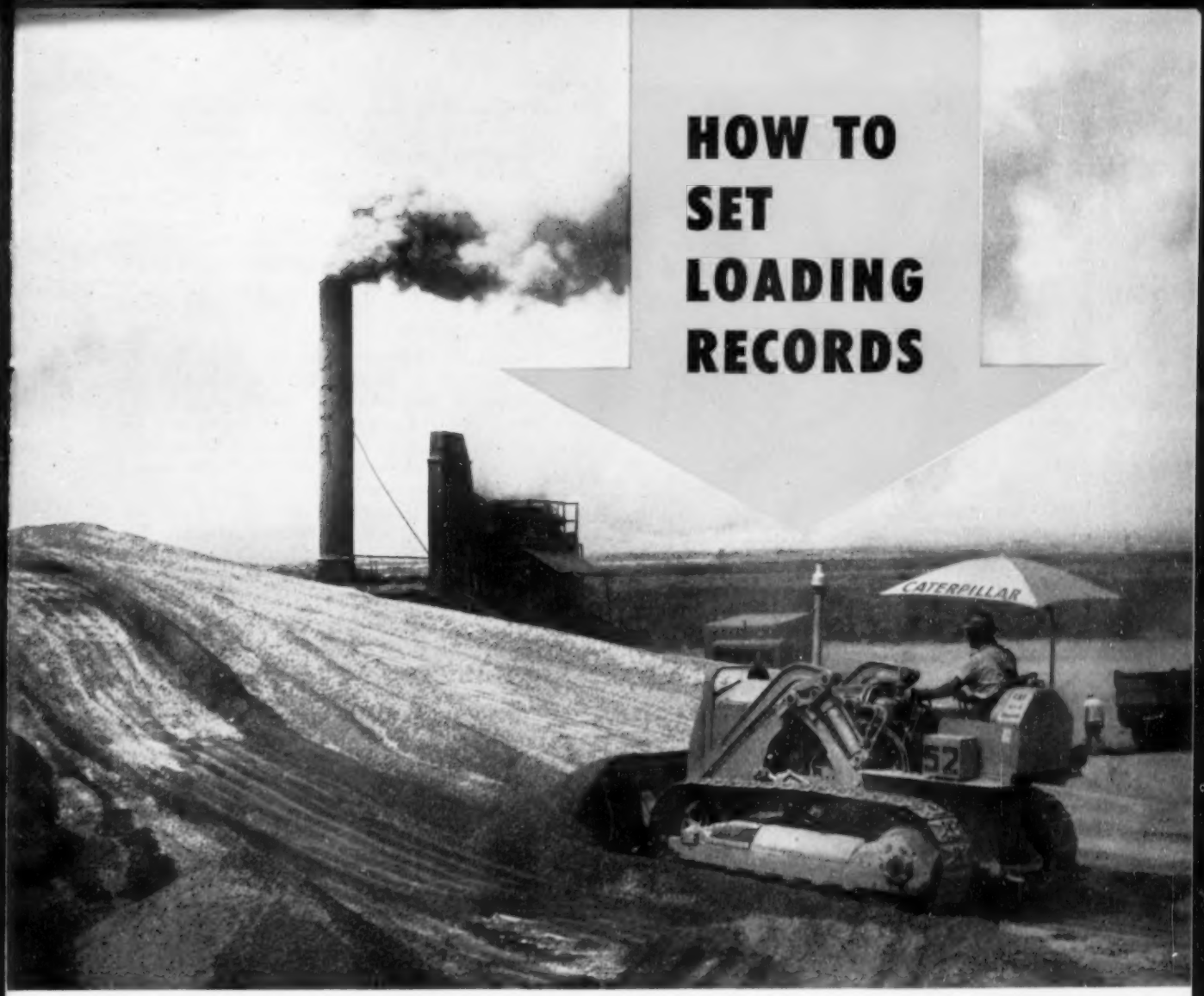
Name.....

Organization.....

Address.....

City..... State.....

9H54



THIS Caterpillar HT4 Shovel feeds a 1500-lb. hot batch asphalt plant and loads trucks for Ideal Asphalt Paving Co., Inc., near Las Vegas, Nev. Plant production averages 500 tons per eight-hour day. This HT4 has loaded as much as 1300 tons of gravel in the same period of time!

The versatile CAT* HT4 Shovel can earn its keep at many tasks: bulk material handling, grading, excavating, light bulldozing, cleaning up. It's compact and maneuverable for work in tight places. Hydraulic controls are precise and fast-acting, and permit simultaneous raising and dumping of the 1¼-yd. bucket. Because it's designed as a unit, with the weight of the bucket evenly distributed along the full length of the tracks, it will not "dance," even with a full load.

Rugged construction is an important reason for the HT4's high work output. It's built to withstand extreme stresses and stay on the job year after year without costly down time. Carefully designed filters and seals protect the machine's Caterpillar-built precision. They keep oil and lubricants *in*, and harmful grit *out* of the engine and hydraulic system.

Ideal Asphalt is predominantly equipped with Caterpillar-built machines. They own two HT4 Shovels, a D7 and two big D8 Tractors, and three Caterpillar Diesel Engines. "We think we can make more money with the big yellow machines," says Mark C. Whiting, company treasurer. "They're dependable, and we can get parts and service when we need them. Our dealer service is the way we like it."

Your Caterpillar Dealer can give *you* the same kind of service. Ask him for black and white *proof* that the Caterpillar HT4 Shovel will do *more* work at *less* cost on *your* job than any other shovel of its size.

Caterpillar Tractor Co., Peoria, Ill., U.S.A.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

NAME THE DATE... YOUR DEALER WILL DEMONSTRATE

30% to 40% faster drilling: D. C. Toye Company's 7500 cu. yd. foundation excavation for Willamette View Manor near Milwaukie, Oregon, included 3500 yds. of basalt rock. Blasts had to be kept small because of nearby hospital. 6′ to 8′ holes were drilled on 4′ to 6′ centers with a 55 lb. sinker. *By using a Jaeger Model 125 compressor, instead of a 105, drilling was completed 30% to 40% faster.*

80 yds. of rock per hour per drill: With 10 wagon drills, H. W. Holt & Son averaged 16,000 cu. yds. of rock excavation per 20-hour day on West Virginia Turnpike. A "600" compressor behind each pair of drills kept them at the required top speed. No excavating contractor, today, would buy a 500 ft. compressor for such work. *The other "old standard" sizes of 60, 105, 160, 210 and 315 ft. are on the way out for similar reasons.*

To power your tools at full efficiency

Jaeger gives you 15% to 25% more air

The difference between a "new standard" Jaeger and others is 15% to 25% more air for your money — 75 ft. instead of 60, 125 ft. instead of 105, and larger sizes comparable.

On the job that additional air often means full pressure instead of mere 70 lbs. pressure at the tools, directly increasing work output 30% to 40%.

Jaeger "Air Plus" compressors have been delivering these higher volumes for years, at moderate temperatures, with notably low fuel consumption, and we believe, the lowest cost of upkeep of any compressors.

Now, when cost-savings are so important, ask your Jaeger distributor to show what he can save you on air and air tool operation — or send for Catalog JC-1.

THE JAEGER MACHINE COMPANY

553 Dublin Avenue, Columbus 16, Ohio

PUMPS • CONCRETE MIXERS • TRUCK MIXERS • TRACTOR LOADERS • PAVING MACHINES

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Excavating Engineer

founded 1905

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BPA Member

Wire Rope at Work—This is part of a multimillion-dollar construction job at Norco, Louisiana, not far from New Orleans. When completed for Shell Oil Company, it will be one of the world's most modern refineries.

Wire rope is one of the hardest-working components of the big steel-erection derricks. Because of the tonnages involved, the units are rigged with large-diameter rope, and there is almost three miles of 1⅛-in. Bethlehem Purple Strand on the job. In addition, several thousand feet of 2-in. Purple Strand is employed as guy lines. Here, as in every type of industry where heavy loads are lifted or hauled, the Bethlehem rope is more than equal to the tasks imposed upon it.

Bethlehem Steel Company, Bethlehem, Pa. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

Mill depots and distributors from coast to coast stock Bethlehem rope for the following industries and numerous others:

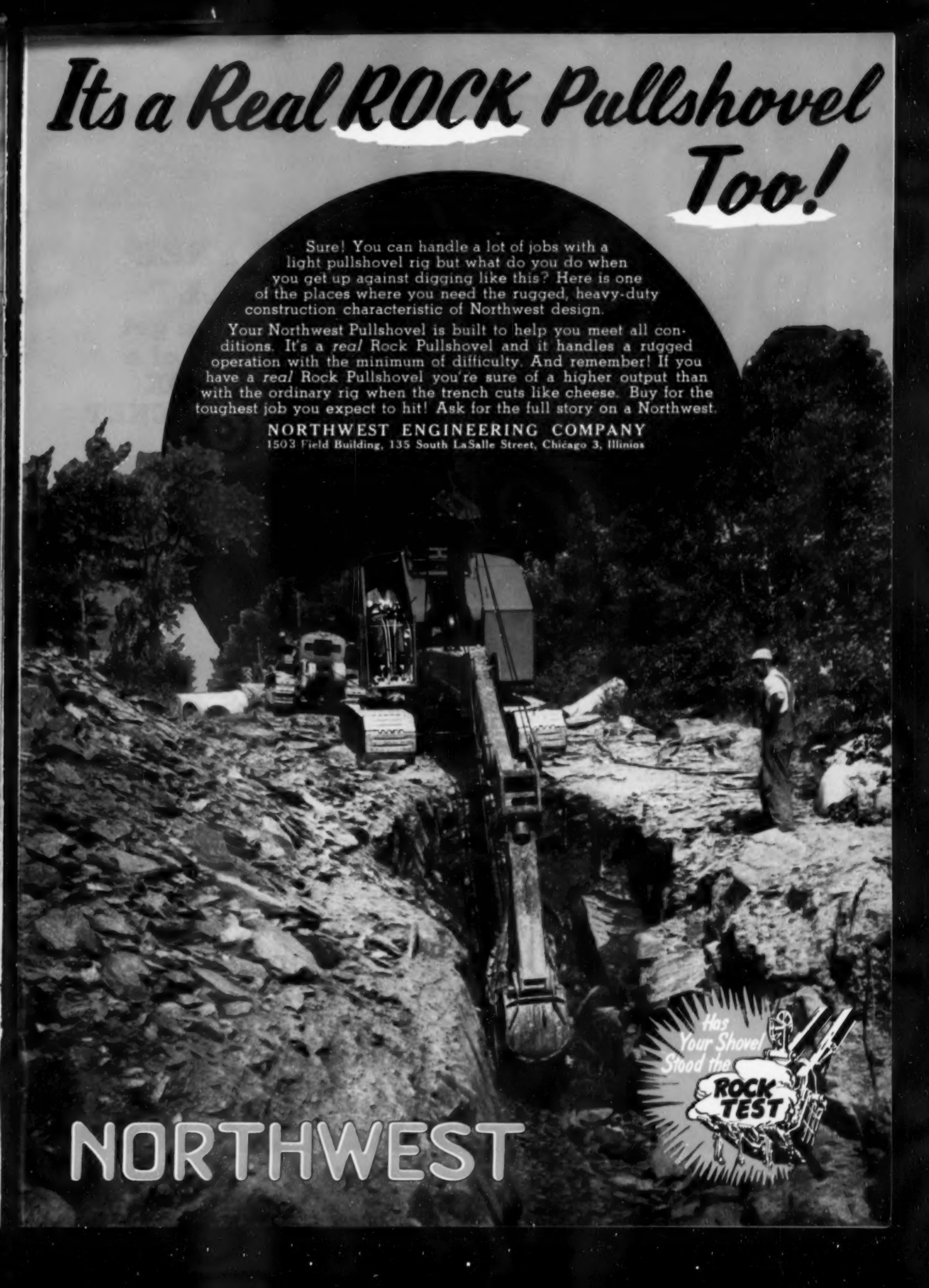
CONSTRUCTION • MINING • PETROLEUM • EXCAVATING • QUARRYING • LOGGING • MANUFACTURING

Its a Real ROCK Pullshovel Too!

Sure! You can handle a lot of jobs with a light pullshovel rig but what do you do when you get up against digging like this? Here is one of the places where you need the rugged, heavy-duty construction characteristic of Northwest design.

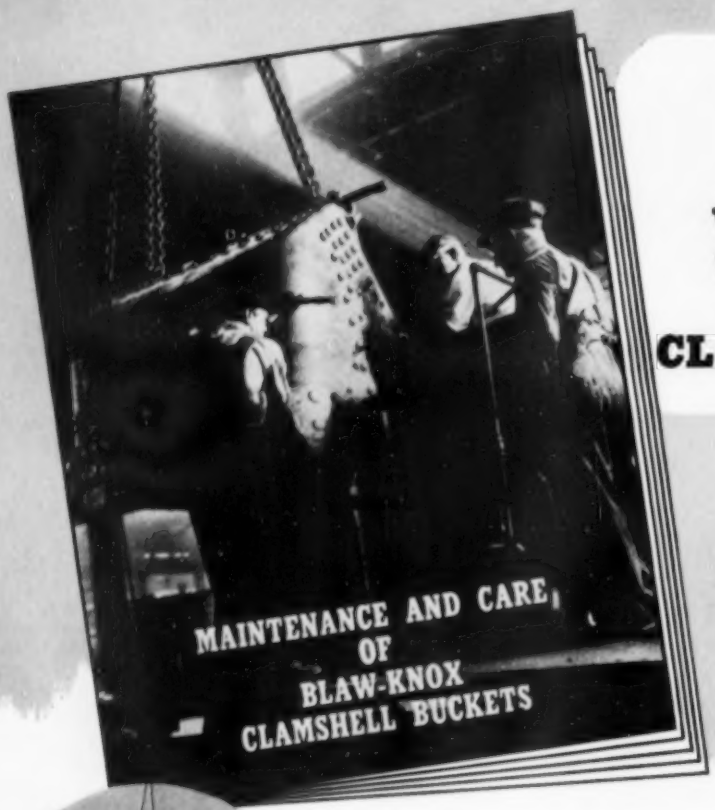
Your Northwest Pullshovel is built to help you meet all conditions. It's a *real* Rock Pullshovel and it handles a rugged operation with the minimum of difficulty. And remember! If you have a *real* Rock Pullshovel you're sure of a higher output than with the ordinary rig when the trench cuts like cheese. Buy for the toughest job you expect to hit! Ask for the full story on a Northwest.

NORTHWEST ENGINEERING COMPANY
1503 Field Building, 135 South LaSalle Street, Chicago 3, Illinois



NORTHWEST

Proper maintenance makes GOOD buckets even BETTER



THIS FREE BOOKLET

will help you get the most out of a BLAW-KNOX CLAMSHELL BUCKET

- Instructions for Operators
- How to Increase Cable Life
- How to Reeve the Bucket for Maximum Efficiency
- Proper Use of Counterweights
- Do's and Don'ts for Long Bucket Life
- How to Straighten and Hard-Surface Bucket Lips
- 40 Pages Full of Bucket-Saver Information

Make Blaw-Knox Clamshell Buckets your first choice for low-cost rehandling, excavating or dredging. There's a size, type and weight to meet every requirement.

Here's a real BUCKET-SAVER booklet that explains in detail how to avoid the common bucket troubles that cause loss of time and money on the job. Among the many "bucket-saver" suggestions described and illustrated are those listed above, plus sections containing lubrication instructions and many other practical and economical hints for bucket care and maintenance.

Bulletin 2373 also explains the importance of using genuine Blaw-Knox repair parts which are especially designed to fit Blaw-Knox Clamshell Buckets. They contain *all* the carefully engineered features of the original parts to assure the efficient operation, low maintenance and long life you expect from Blaw-Knox products.

Write for your "Bucket-Saver" Booklet today!

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BLAW-KNOX
EQUIPMENT DIVISION
Department 742
PITTSBURGH 38, PA.
Offices in Principal Cities

BLAW-KNOX

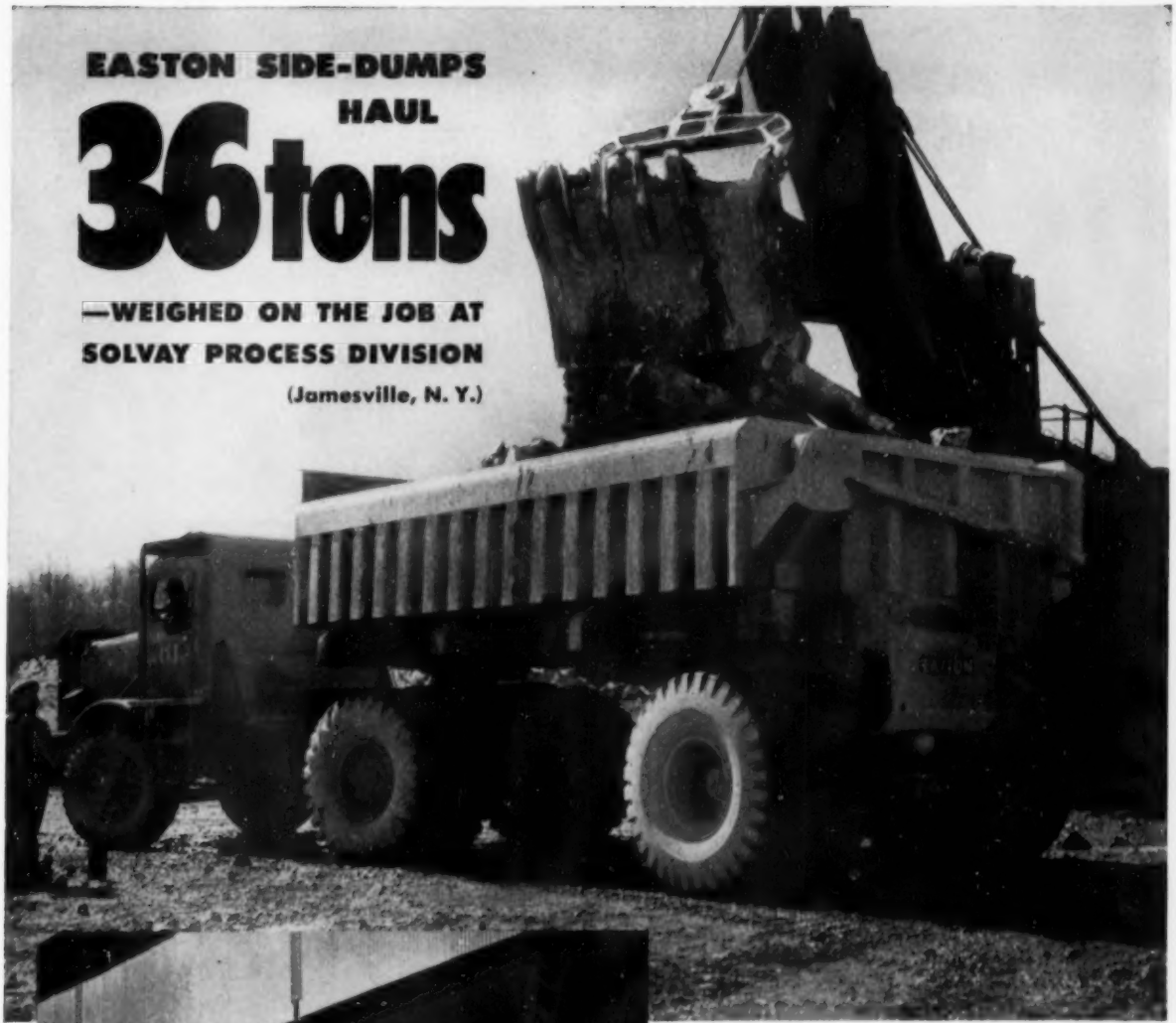
BLAW-KNOX
CLAMSHELL BUCKETS

EASTON SIDE-DUMPS HAUL

36 tons

—WEIGHED ON THE JOB AT SOLVAY PROCESS DIVISION

(Jamesville, N. Y.)



Feeding the big primary crusher. EASTON TL-2736 Trailer with Euclid 46-TD Tractor dumped by EASTON Electric Overhead Hoist.

Nine EASTON side-dumps replace rail haulage to provide flexibility and increased production

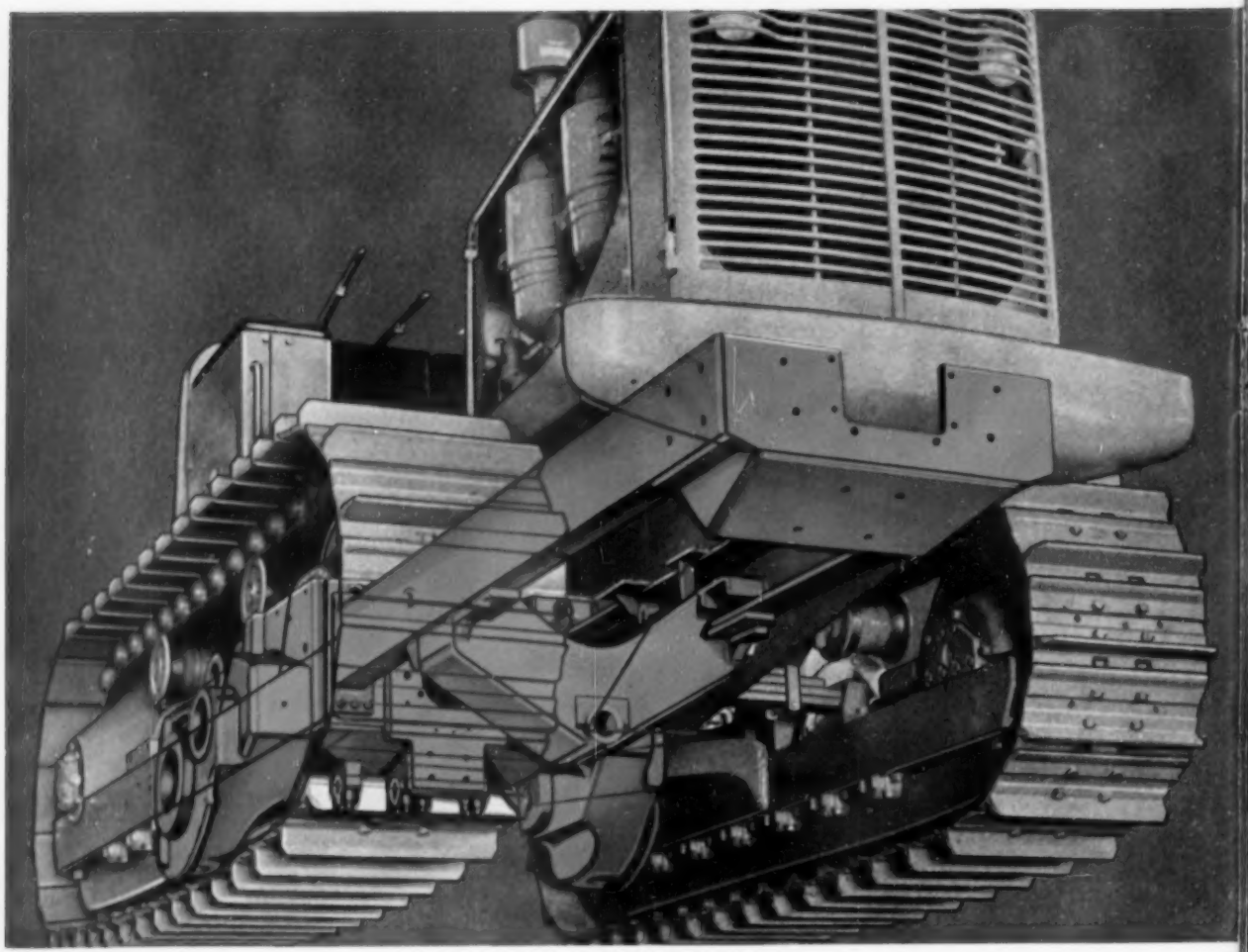
Solvay's nine new EASTON TL Trailers load at four different levels at four faces. Traffic is directed, trip-by-trip, from a central control tower.

EASTON TL TRAILER—The standard EASTON lift-door side-dump trailer. Capacities from 22 to 36 tons. Used singly or in combination. Standard EASTON axle. Durable, all-welded construction, reinforced throughout. Works with the truck or tractor of your choice. The same bodies may also be truck-mounted. *Built for the low-cost haul!*

B-1063

EASTON®

Easton Car & Construction Company · Easton, Pa.



HOW THE MAIN FRAME CONTRIBUTES TO TOP TRACTOR PERFORMANCE

All-Steel Box A-Frame is a Key to Outstanding, Low-Cost Record of Allis-Chalmers Tractors

Contractors all over the country are putting new emphasis on shrewd equipment buying. And rightly so. To win bids, stay on schedule and make a profit in the face of today's keen competition, they have to be *sure* of getting top value in design, performance and service features.

More and more of these contractors are now using Allis-Chalmers tractors. One of the big reasons is hidden in the heart of the tractor. It's the exclusive design which characterizes the main frames of all four Allis-Chalmers tractors. These frames are one-piece, all-steel, welded structural members (like the girders in a bridge or the columns in a building). They help provide greater strength and flexibility to withstand shock loads, better equipment mounting, improved weight distribution and outstanding service simplicity.

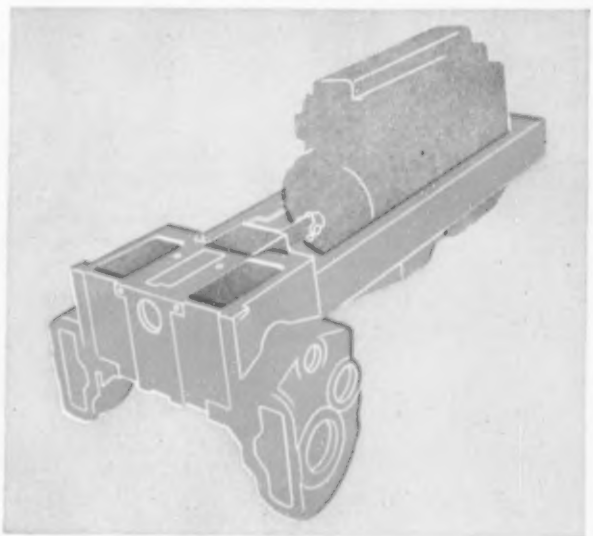
We invite you to see these advantages . . . first at your nearby Allis-Chalmers dealer, and then in a demonstration. Whichever size you may be interested in, you'll see a tractor that is not just modified . . . but designed new-from-the-ground-up to meet the needs of today's jobs.

ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

"Rolls with the Punch" — The resiliency of the high-tensile steel main frame enables it to flex slightly under extreme shock loads . . . without transmitting the strain to engine, clutch or transmission . . . thus offering extra protection to the complete machine.

Weight Distribution Designed for Today's Jobs— Box A-Frame lets Allis-Chalmers use a modern engine . . . locate main parts for best over-all balance . . . put more weight lower in tractor where it does the most good . . . make the tractor "built to take it."

Better Equipment Mounting — Designed to best serve changing tractor application (today over 70 percent of all tractor equipment is mounted), this compact main frame allows bulldozers to be mounted in close . . . provides ample clearance for equipment like front-end shovels . . . permits wide track shoes . . . improves performance of the entire unit.



Unit Construction for Service Simplicity — Since the main frame carries the *structural* load, power drive components are designed to do only their specific jobs. They can be readily removed, repaired or replaced without disturbing adjacent parts . . . saving service time . . . actually cutting down time because assemblies can easily be serviced under shop conditions if desired.

HD-20	HD-15	HD-9	HD-5
Weight 41,000 lb Hydraulic Torque Converter Drive 175 net engine hp	Weight 28,000 lb Choice of standard transmission or hydraulic torque converter drive	Weight 18,800 lb 72 drawbar hp	Weight 11,250 lb 40 drawbar hp

Savin Construction Corp. blasts ahead with 6,000 CFM of

GYRO-FLO

ROTARY COMPRESSORS

NEW YORK CITY to Buffalo—non stop. That's the fabulous N. Y. Thruway, scheduled for completion in 1954. To speed construction of two sections of this super-speed highway, in the Catskill and Albany areas, the Savin Construction Corporation of East Hartford, Conn. is using ten 600-cfm Gyro-Flo portable compressors.

The compressor engineer on this job likes the Gyro-Flo because, "It's got fewer wearing parts so it's bound to give you less trouble." Truer words were never spoken. Gyro-Flo *rotary* compressors have no pistons, rings, rods, valves or clutches. Output is smoother, steadier and *cooler*—air temperature never exceeds 200°F.

Now available in 125, 210, 315 and 600 cfm sizes, there's a Gyro-Flo portable that's *right* for any construction job. Your nearest Ingersoll-Rand distributor or branch office will be glad to tell you all about it.

One of Savin Construction Corporation's ten Gyro-Flo 600's, supplying two I-R Wagon Drills equipped with air hoists for easy maneuverability over rough ground.

This battery of four Gyro-Flo 600's operated *nine* Wagon Drills — on the Savin project near Catskill, N. Y.

Ingersoll-Rand
11 Broadway, New York 4, N. Y.

CONTRACTORS' COMBINATION

COMPRESSORS
ROCK DRILLS
AIR TOOLS
TURBO BLOWERS
CONDENSERS
CENTRIFUGAL PUMPS
DIESEL AND GAS ENGINES

2-27

"I get these Heaped Loads every cycle!"

Paul Crawley, fast-moving Illinois contractor, tells how he moved 197,700 cubic yards in 13 days.

"It takes more than luck," says Paul Crawley, Edwardsville, Ill., *"when you start a big job three weeks behind schedule—and catch up in two short months!*

"We did it with a team of top operators and mechanics, using the right kind of equipment for the job."

After being held up for 3 weeks by heavy rains, Crawley's fast-moving crew went into action May 1. Soon they were putting a heaped load on the Cahokia Levee every 20 seconds. In one 13-day period, they moved 197,700 cubic yards. By July 1 they had caught up—were actually three days ahead of schedule!

If you have dirt to move, with time and costs to consider, see the man who can help you most—your IH Industrial Distributor. Ask him about rugged, simple INTERNATIONAL "Job-Phased"* equipment that does such an outstanding job for contractors.

Loadin' on the levee for the Cahokia Creek Diversion Channel, near East St. Louis, Ill., one of Paul Crawley's three INTERNATIONAL TD-24 crawlers with INTERNATIONAL B-170A scrapers walks away with a heaped load to help make time on a tight schedule. The excellent flotation of the INTERNATIONAL Scraper, its fast fill, short turning radius, remarkable stability and fast, clean dumps were big factors in Crawley's great record on this job.

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

For every move in Earthmoving

ON TRACKS ...ON RUBBER

See INTERNATIONAL'S "Job-Phased"* equipment

INTERNATIONAL HARVESTER

POWER THAT PAYS

INTERNATIONAL

***Phased Equipment**—Machines designed and built to handle each major phase of earthmoving most efficiently and economically.

"I was promised delivery today,

but now I'm told you've no stock of one rope and only half enough of another. This delay is costing me money and plenty of it. From now on it's Roebling for me!"

* * *

You can count on prompt and full delivery of Roebling wire rope. Your nearest Roebling office and distributor will help you choose the rope that will perform and stand up best in excavating and construction service. And you'll get what you want, when you want it—straight from nearby warehouse stock.

ROEBLING

Subsidiary of The Colorado Fuel and Iron Corporation

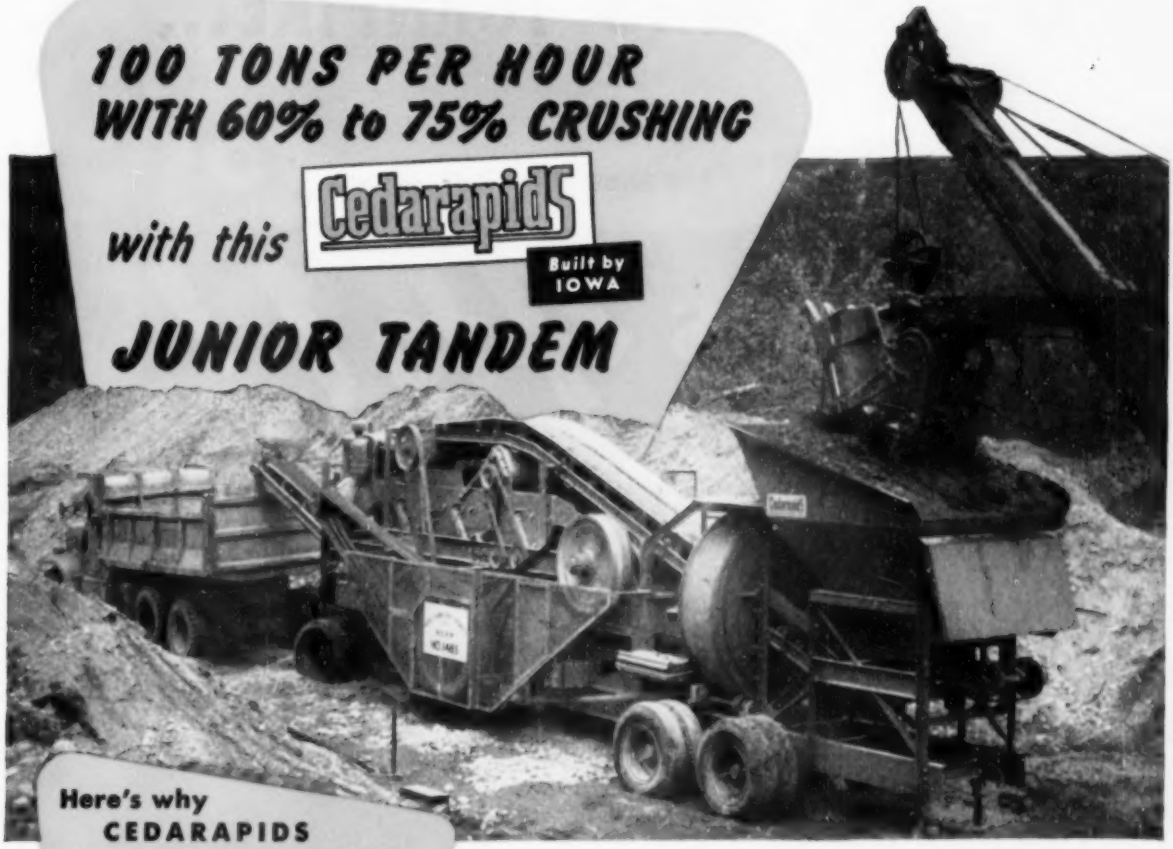
JOHN A. ROEBLING'S SONS CORPORATION, TRENTON 2, N. J.

BRANCHES: ATLANTA, 934 AVON AVE. • BOSTON, 51 SLEEPER ST. • CHICAGO, 5525 W. ROOSEVELT RD. • CINCINNATI, 3253 FREDONIA AVE. • CLEVELAND, 13225 LAKEWOOD HEIGHTS BLVD. • DENVER, 4801 JACKSON ST. • DETROIT, 915 FISHER BLDG. • HOUSTON, 6216 NAVIGATION BLVD. • LOS ANGELES, 5340 E. HARBOR ST. • NEW YORK, 19 RECTOR ST. • ODESSA, TEXAS, 1920 E. 2ND ST. • PHILADELPHIA, 230 VINE ST. • SAN FRANCISCO, 1740 17TH ST. • SEATTLE, 900 1ST AVE. S. • TULSA, 321 N. CHEYENNE ST. • EXPORT SALES OFFICE, TRENTON 2, N. J.

100 TONS PER HOUR WITH 60% to 75% CRUSHING

with this Cedarapids Built by IOWA

JUNIOR TANDEM



Here's why CEDARAPIDS AGGREGATE PLANTS give you bigger production at lower cost

- The faster, more efficient action of Cedarapids Vibrating Screens, plus the *horizontal* design which utilizes the full openings of the screen cloth, outscreens other types by passing *20 to 30% more* accurately graded aggregate through each square foot of screen.
- Production of crushers, screen and conveyors is carefully balanced to eliminate bottlenecks, reduce the circulating load, and assure maximum output with low power consumption.
- Low-cost operation results from the low maintenance requirements. Expert design, highest quality construction and heat treated, stress-relieved components all contribute to the rugged dependability and trouble-free life of Cedarapids crushing and screening equipment.

Producing aggregate at a hundred ton per hour clip for graveling access roads is a profitable operation . . . especially under tough 60% to 75% crushing conditions.

But that's typical average production for Cedarapids Junior Tandem Plants. That's one of the reasons why these plants are so widely used throughout the country for a wide variety of medium sized jobs where low costs are as important as high output figures.

Whether *your* job calls for 100 tons per hour . . . or 1000 tons per hour . . . there's a Cedarapids Aggregate Plant designed to make money for you. Your Cedarapids distributor can give you the facts. See him today.

IOWA MANUFACTURING COMPANY
Cedar Rapids, Iowa, U.S.A.

Master Bituminous Mixing Plant

Vibratory Soil Compactor

Motorized Head Pulley

Model G-60—6000-lb. Bituminous Mixing Plant

ON THE OHIO TURNPIKE...

It's "Eucs" 4 to 1!

438 "EUCS" SPEED GRADING WORK

From the Pennsylvania border to the Indiana line, 261 miles to the west, Euclid equipment is maintaining a fast pace on the 326 million dollar Ohio Turnpike. "Euc" Scrapers, Bottom-Dumps, Loaders and Rear-Dumps were first choice all the way—they outnumber all competitive rubber-tired earth moving equipment by better than 4 to 1!

There's good reason for this overwhelming preference by all of these leading contractors. They know from experience that they can depend on "Eucs" to get more work done on schedule—with little or no down time for repairs. Mighty important, too, is the ability of "Eucs" to take the toughest jobs in stride and move more payloads.

If you can't visit this big Ohio "Road Show" to see the wide range of work being done by "Eucs," have your nearby Euclid distributor give you helpful facts and figures on the complete line of Euclid equipment.

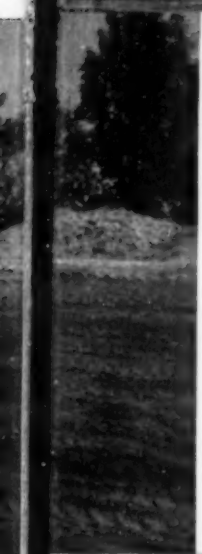
EUCLID DIVISION GENERAL MOTORS CORPORATION, Cleveland 17, Ohio

CABLE ADDRESS, YUKLID CODE: BENTLEY

Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE

GM GENERAL MOTORS



78 "EUC" SCRAPERS
are a Feature of this Road Show

Euclid scrapers—78 of them—are maintaining a fast pace for 14 of the contractors on the Ohio Turnpike. Big Twin-Power "Eucs" of 18 cu. yd. struck capacity and 15.5 cu. yd. scrapers are making dirt fly all along the way. Fast travel speed, ability to get heaped loads in practically any material, and unsurpassed job availability make Euclid scrapers the logical choice of rubber-tired earth moving equipment for these grading contracts.

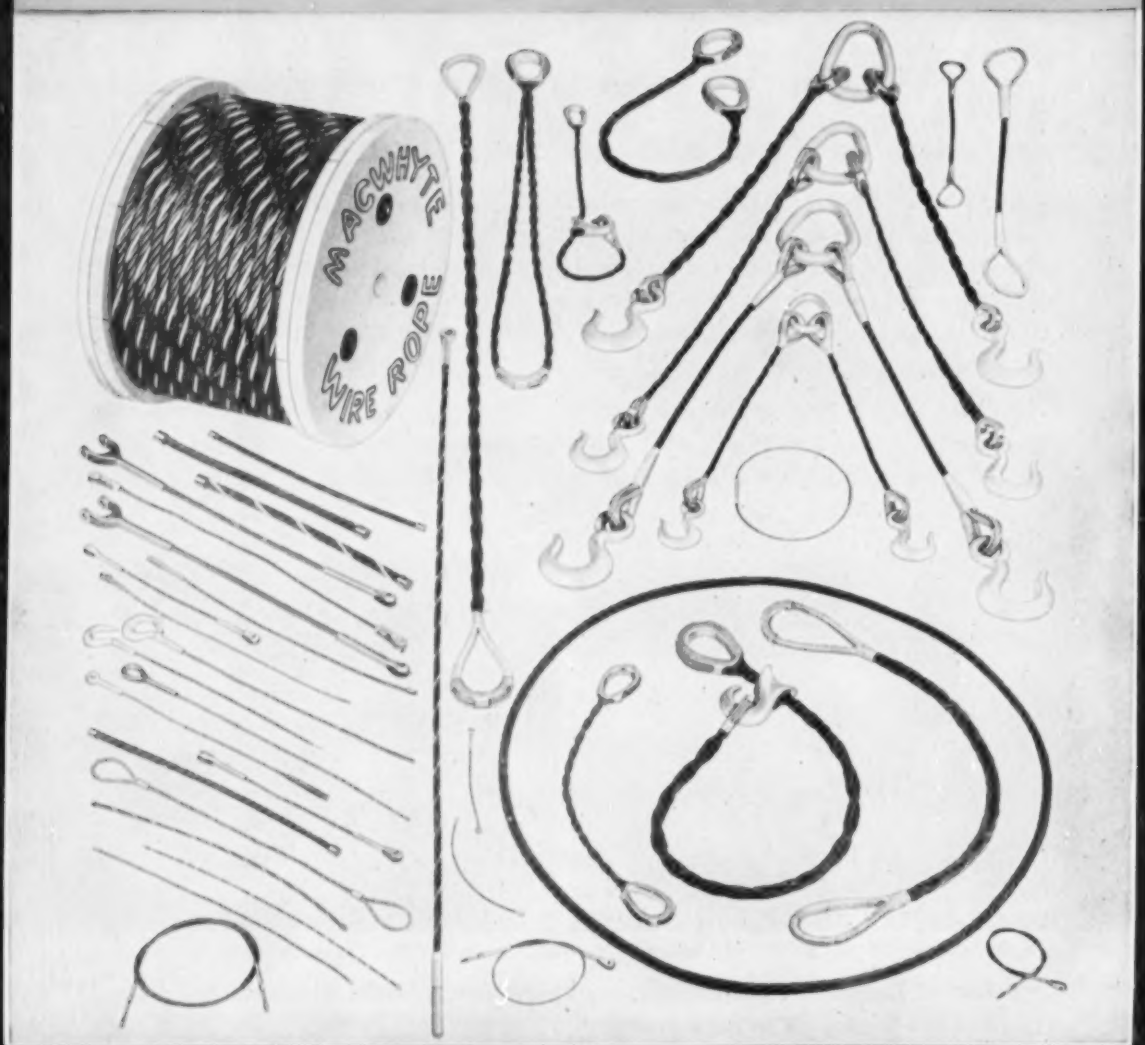
Simple, rugged design and easy accessibility for servicing keeps down time to a minimum. Because "Eucs" stay on the job week after week . . . they are helping to keep the grading on schedule in spite of the wettest spring in years.

Fleets of Euclid Bottom-Dumps, working under shovels, draglines and "Euc" Loaders are paying off in high production and low cost yardage, too. As of early May there are 20 Loaders and 306 Bottom-Dumps currently at work on the project . . . 34 Rear-Dumps complete the Euclid Equipment . . . and there'll be more as the big job rolls into high gear!

Whether you're working on roads, airports, dams or other heavy earth moving, you can depend on "Eucs" to move more yards profitably. Get in touch with your Euclid distributor for information on the complete line of Euclid earth moving equipment—he's a good man to know!

"EUCS" move more yards per day
with less down time and maintenance costs

Save time and money with Macwhyte wire rope products



Above are shown only a few of the wire rope products made by Macwhyte. Wire rope is available in a thousand and one types and sizes. Also available are hundreds of types of Braided Wire Rope Slings, assemblies, and many types of aircraft control cable, terminals and tie-rods.

Save time and money by getting the proper wire rope product for your needs. Macwhyte engineers will gladly consult with you, and make recommendations based on years of experience. Catalogs are available.

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2903 Fourteenth Avenue
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Manufacturers of Internally Lubricated PREformed Wire Rope, Braided Wire Rope Slings, Aircraft Cables and Assemblies, Monel Metal, Stainless Steel Wire Rope and Wire Rope Assemblies. Mill depots: New York • Pittsburgh • Chicago St. Paul • Fort Worth • Portland • Seattle San Francisco • Los Angeles
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• **Spend less time loading, get big loads** . . . Allis-Chalmers Motor Scrapers have up to 20 horsepower for every yard of struck capacity — for fast loading. A curved bottom and offset cutting edge boils the dirt in *fast* . . . completely fills the bowl and packs yardage-robbing corner voids.

• **Spend less time traveling** . . . The equal division of weight between front and rear wheels, low center of gravity, high-traction tires plus four-wheel air brakes gives the operator confidence to run at top speeds. Foam rubber seat, finger-tip control, shock-free hydraulic steering and full visibility add safety and operator comfort, which pay off in greater output.

Here's why Allis-Chalmers Motor Scrapers give you

EXTRA YARDAGE ON EVERY SHIFT

Modern equipment helps cut your operating costs in today's competition. Let your Allis-Chalmers dealer demonstrate how the Motor Scraper actually saves time on every trip, gives you extra yardage every shift.

	Hp	Struck Cap. Yd	Heaped Cap. Yd	Wt. Lb
TS-300	280	14	18	47,900
TS-200	176	10	13	37,600

• **Spend less time dumping** . . . Positive, forced ejection "bulldozes" dirt out on the run, spots or spreads it right where you want it. Ejector rides on a three-point roller suspension . . . assures complete dumping of sticky loads. High apron opens to a big 8 ft, 6 in.

ALLIS-CHALMERS
TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

Excavating Engineer
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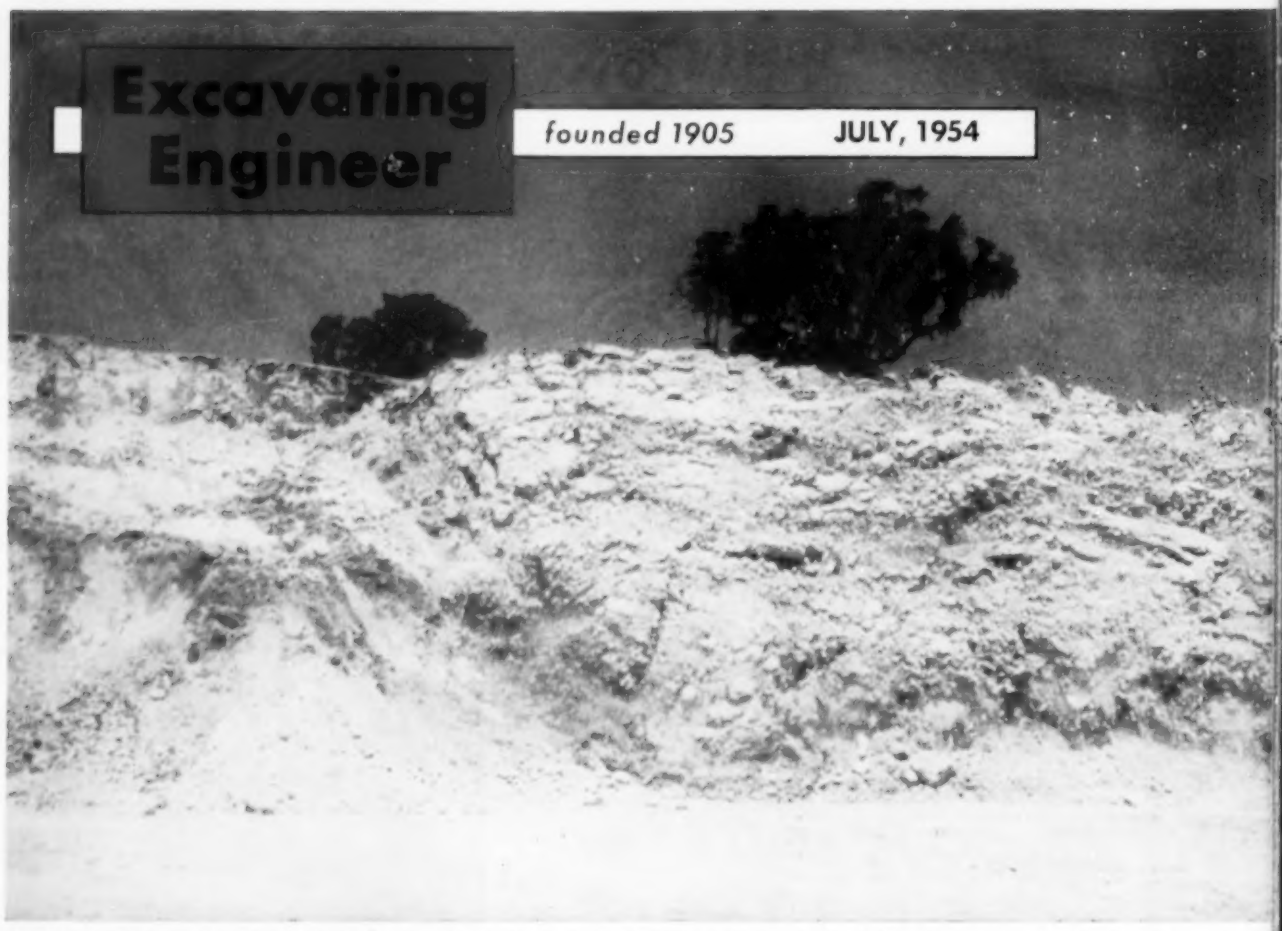


Eight to ten thousand yards of limestone come down in single shot at Camp Concrete Rock Co. quarry near Brooksville, Fla.

Oranges, Cattle and Limestone

Camp Concrete Rock Co. keeps modernizing its plant and pit to turn out bigger tonnages of limestone. People like that in Florida where any income-producing business are nurtured.

LOCATED in Florida's central "ridge" area, Hernando County prospered early in the citrus and cattle businesses. A comparatively late arrival (1925) in the county's business fold, limestone quarrying today bids to rival the older sources of income with the dollar value of its output.

One company alone produces over one million tons of stone for market in a year. The Camp Concrete Rock Co. recovers and processes that amount in its pit and plant located five miles northwest of Brooksville. Though it is the largest in the Florida hard rock area, Camp's operation is typical of a number of local quarries.

The firm's quarry occupies 5,200 acres although only 500 acres have been mined or prospected for mining. Since the product requires an unusual amount of washing, much of the acreage has been diked to create reservoirs for spoils, slimes, and clay washings. It is anticipated that much of the waste area will be greatly improved for cattle pasturage when the minerals settle out of the washings.

Included in the total area is a large percentage of limestone deposit which has not been thoroughly delineated. The owners have now outlined a 15 years' supply.

The overburden is shallow. It averages 18 inches, builds up to three or four feet in spots.

Tractor equipment strips the burden. To handle this step, the company owns four Caterpillar crawler tractors, three D8's and a D7. These rigs are equipped with bulldozers for shoving dirt, brush, and trees aside. They also pull two scrapers on the stripping assignment after the land has been cleared, an 8-yd. Heil and a 16-yd. Caterpillar. When the dozers are not uncovering stone,

Mayhew rotary mounted on International L-190 truck sinks 6-in. blast holes on 18-ft. centers. Rock ranges in depth from 25 to 55 feet. Overburden averages 18 inches.

they prove valuable in other jobs. They keep conveyor and truck spill cleaned up, maintain and build haul roads, and in the pit they keep rock shoved in close to the bank for the shovels.

Camp crews do all stripping during the dry season, winter and early spring. At that time they strip approximately 20 acres and use the material to fill in low places where there is no rock. Mostly they fill sinks and swampy areas.

All rock is shot for loading. A two-man drill crew uses an L-190 International truck-mounted Mayhew rotary (made in Dallas) for sinking blast holes. The rig puts down 6-in. holes on 18-ft. centers in a row 20 feet back from the matrix face.

The rock strata ranges in depth from 25 to 55 feet. Holes are bottomed on the floor except in softer material. In places, the last few feet of rock may become comparatively soft. Then holes will be bottomed six feet above the floor because the blast would be dissipated in the softer material. The banks which Camp excavates meet stiff state road specification. Since the softer strata which lies deeper does not, the company is not much interested in shattering it except to keep a level pit floor.

The Mayhew drills approximately 70 feet of hole per hour counting move-ups. Varel bits are used and they average 3,000 feet, at which time they are re-tipped for an additional 3,000 feet.

In order to give the holes greater capacity at the base of the formation, the crew springs the holes with a light dynamite charge before the blasting charge is loaded. To do this, the crew

J. V. Simmons, vice president in charge of production, headquarters in Ocala, Fla.

Goodyear conveyor moves stone from field hopper after it has passed Allis-Chalmers crusher.

Three 54-B shovels do most of loading. Top one is Buda-powered. Bottom one and 54-B on opposite page are powered by G-E motors. Eucs take load.

loads 50 sticks of dynamite in the hole and fires them with an electric cap. Firing the light charge without stemming makes a cavity at the bottom of the hole.

In a typical 40-ft. and deeper hole, the crew then pours 1,000-lbs. of free-flowing dynamite. From five to eight holes are fired at once; average shot is six holes. A single dynamite stick and electric cap fires each hole. A 50-cap blasting machine fires the blast of several holes; no delays are used. Camp crews consume 25,000-lbs. of powder per week. Blasts go off daily during the lunch hour.

A shot brings down from 8,000 to 10,000 yards of satisfactorily fragmented limestone. This amount of broken matrix will last a loading shovel approximately four days.

Four Loaders Work Pits

A limited amount of secondary blasting is caused by occasional boulders. These are lifted back by loading shovels. Later crews break them down with jackhammer and dynamite.

Loading broken limestone to trucks is the job of four shovels working at three faces in the quarry. Three of these are electric excavators and the fourth is Diesel powered. Two 2½-yd. Bucyrus-Erie 54-B's are electrics while a third 54-B is actuated by a Buda Diesel. A 2-yd. Marion 480 is also an electric machine. General Electric motors power the three electric shovels.

Eight 7-yd. Koehring Dumptors and eight 8TD 24-ton Euclids take the rock from the excavators. Formerly trucks hauled shattered material from two of the three pits to a system of cable-operated bottom dump skip cars. These in turn fed a primary crusher in the main plant. This system is now in the process of being replaced with a short haul system which is already in use in the third pit.

In the modernized pit, the trucks haul rock 350 yards from the face to a field installation combining an Allis-Chalmers 24 by 60 single roll primary crusher and a MacLanahan trunion de-watering screen. Trucks discharge to hopper where high-powered monitor washes material into the crusher. The material passes through the crusher to the de-watering screen which feeds the minus 6-in. discharge to a Goodyear conveyor belt. The 30-in. belt moves the partially processed material at the rate of 500 fpm., a distance of 2,000 feet in a single flight. Smaller material cushions larger on the belt. End of the flight is an elevated stacker which builds a seven to 8,000 ton surge pile. In the single flight, the belt rises 90 feet.

The surge pile rises over a concrete tunnel. An electric vibrating feeder and gate in the tunnel's ceiling draws stone to a second 2,000-ft. flight of 30-in. belt. This flight rises a total of 90 feet and terminates at the central Camp processing plant.

Finding that the short haul and con-

veyor system has increased output of the pit, Camp this spring converted its two other pits to the same type of operation. A single-roll 24 by 60 Allis-Chalmers primary and a 900-ft. conveyor will take the blasted rock from the two pits, both of which are closer in to the main crushing and sizing plant.

Processing Equipment

Entering the plant, 3-to 6-in. material moves through the secondary crusher, a double roll Allis-Chalmers, for further reduction. Minus 3-in. material, both from the belt and the secondary crusher, pass through a MacLanahan log washer. Another double roll Allis-Chalmers crusher accomplishes any additional reduction. Finally a scalping screen and five Allis-Chalmers vibrating screens separate the material into six commercial sizes. Camp regularly produces the following grades of stone: 2½-in., 1½-in., 1-in., ¾-in., ⅜-in., and ¼-in.

The matrix that Camp quarries is a crystallized limestone almost devoid of silica. However, during the crushing, screening and washing processes, sand-like limestone particles are separated from the rock. Equipment settles this material out and the company sells it for screenings in two grades: washed screenings and regular screenings.

Screenings are slightly coarser than sand. Only 6 + 10% will pass through a 200-mesh screen while 30 to 40% of sand will pass through such a screen.

Three debris pumps move the slimes to basins where screenings settle out. A 6-in. sand pump removes fines to a sand drag which takes out the heavier material sold as washed screenings. Screenings are stockpiled and later loaded out to railroad cars by an old class 80 electric Bucyrus machine swinging a 3-yd. Owen clamshell bucket.

The six grades of stone turned out in the plant are conveyed into six elevated 20-ton concrete silos. The silos gravity feed to five-ton bottom dump skip cars traveling on narrow gauge tracks. Electrically powered steel cables pull the cars from under the silos out on elevated trestles. At or near the end of the trestle, the skip's doors are tripped and the load of 2,400-lbs.-per-yard material falls to stockpile. Six tracks run out over the half-dozen piles, each of which has a capacity of 50,000 yards.

Concrete tunnels with overhead chute openings pass under the stockpiles. Two 24-in. Goodyear conveyor belts draw stone from the piles and feed it to railroad cars. The longer one—1,035 feet passes under four piles and terminates at the loading dock. A shorter belt—400 feet—draws from two piles and intercepts the long belt. Under this system Camp can supply a customer with any mixture of stone he orders.

Stone receives a final rinsing at the loading dock just before it enters outgoing railroad cars of the Seaboard Air Lines Railroad. As you would guess, the almost continuous washing of Camp stone requires a large amount of water. Three 2,500 gpm and one 500 gpm deep well turbine pumps draw the water supply from 100-ft. deep wells. Two of the pumps delivering the 8,000 gpm of water required by the plant are Lanes and the other two are Worthingtons.

Since the Camp quarry is predominantly an electric-powered installation,

A ¾-yd. Bucyrus-Erie 22-B dragline loads the blasted limestone to Koehring Dumpter.

it is to be expected that it requires a large amount of power. The transformer which supplies the mill and shovels carries a load sufficient to light and operate a city of 5,000 population. Florida Power Corp is the source.

Camp output averages 90,000 tons per month or 4,500 tons per day turned out by a 150-man payroll. All crews work a single shift, five days per week. The processing plant, fed from surge pile, works an additional eight-hour shift at night. The bulk of the output is sold to ready-mix plants, block plants, and state and local highway departments. The exclusive sales agent for the quarry's product is the Florida Crushed Stone Co., which is owned by Camp Concrete Rock Co. and the William P. MacDonald Corp. Sales offices are in Ocala, Fla. L. B. Lovett is general manager of the sales company.

Officers of Camp Concrete Rock Co. are Clarence Camp II, president, J. V. Simmons, vice president in charge of production, R. E. Austin, vice president and purchasing agent, and B. M. Craig, secretary-treasurer. General superintendent of the firm's quarry is R. H. Mountain.

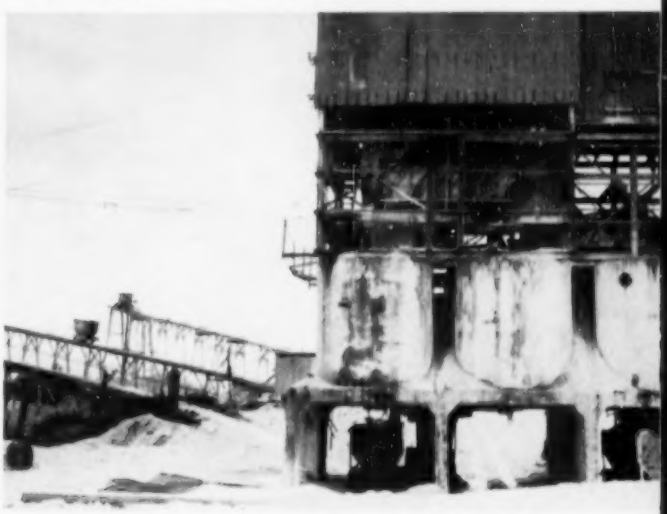
Because its office burned down and it had trouble finding suitable space to rent, the company recently built an impressive new office building in the heart of Ocala. The structure boasts 10,000 square feet of floor space and provides basement parking facilities.

In its elegant board room, a company official showed us a half-hour colored movie the firm made. It depicts the quarrying operation from beginning to end. The film is made available to groups. Although it is not keyed to an advertising pitch, it undoubtedly helps sales by bringing home Camp's production facilities and the thorough processing and testing applied to all company products. It is this attention to output and quality which has brought the limestone deposits of Hernando County to rank with oranges and cattle.

Cable-operated, bottom-dump cars move product on elevated tracks to stockpiles. The stacking system is electrically powered.

Caterpillar crawler doubles as switch engine to move gondolas in company yard. Railroad hauls away most of plant's output.

Koehring Dumptor takes on limestone from Marion shovel.



Silos gravity feed graded stone to cars for stockpiling.

Class 80 Bucyrus applies 3½-yd. Owen clam to screenings.

At overhead terminus, doors trip and stone drops to pile.

Clamshell dredge places pit-run sand to build cofferdam wall as Casey crew makes progress on initial bridge pier contract.

Push Golden Triangle Face Lifting

John F. Casey Co., Pittsburgh, has initial contract, work well under way. Interchange features two-tiered bridge and tunnel.

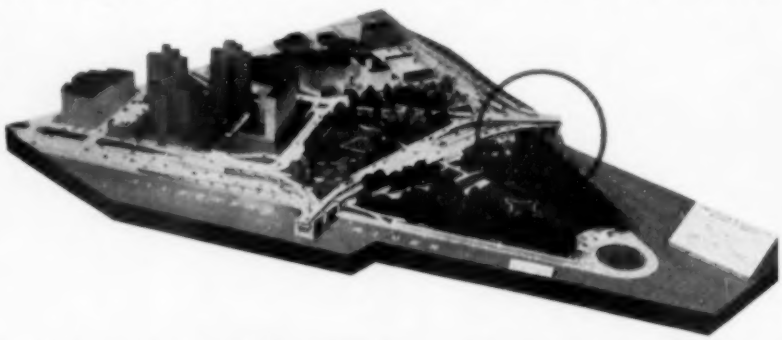
HISTORIC Point Bridges, long trademarks of the Golden Triangle that is this city of Pittsburgh, are soon to be no more.

The old steel structures spanning the Monongahela and Allegheny rivers where they unite here to form the Beautiful Ohio were erected over a quarter of a century ago, and while they certainly afford eye-catching landmarks, they leave something to be desired when it comes to handling the mounting flow of Pittsburgh's vehicle traffic. So the picturesque spans are to be torn down, to be replaced by modern, two-tiered structures which will be a part of the city's proposed new interchange.

The entire project, as imposing as its title—Penn-Lincoln Parkway West Point Interchange—also calls for a tunnel through Mt. Washington to connect with US routes 22, 30, and 51. The span across the Monongahela, to be called Fort Pitt Bridge, will enter and open into the tunnel on the south shore of the river. For added safety and speed of traffic flow, each tier will handle one-way traffic only.

In addition to providing easy access to downtown Pittsburgh, the proposed interchange will hook up with Parkway East, already completed and a picture of the modern expressway facilities rapidly becoming characteristic of the Commonwealth of Pennsylvania. Moreover, Parkway East runs directly into the famed Penn Turnpike, so the end result means providing for safe, speedy traffic flow from the state's western border to the eastern seaboard.

The first indications of what is to change the familiar Point scene are al-



Impressive name for point development program shown in model is Penn-Lincoln Parkway West Point Interchange. Circle indicates area of Casey's present contract.

ready in progress on the north bank of the Monongahela just off the apex of the Great Triangle. For here a man-made peninsula juts out from the bank 130 feet into the river for some 280 feet paralleling Fort Pitt boulevard.

The John F. Casey Co. of Pittsburgh has, via a coffer dam, constructed the peninsula preparatory to the building of four bridge piers scheduled for this particular location. The piers, 30 feet square and 100 feet top to bottom, will rise 50 feet above water level. One double pier will be constructed in each of two other coffers which Casey plans to build out into the river one adjacent to this one and one across the river. Three other river piers and 600 feet of concrete river retaining wall along the Pittsburgh shoreline complete the contract, which incidentally is the only one let thus far in the over-all proposed bridges, interchange, and tunnel. The nine piers and retainer wall call for approximately 18,000 yards of concrete.

Start Driving in March

Casey started the job, a $5 million project, on the 1st of March of this year. Using skeleton steel tubing 42 feet in diameter as a guide, Casey's Bucyrus-Erie 51-B powered by a Cat D17000 Diesel drove piling for the first of nine

Bucyrus-Erie 51-B crane powered by Cat Diesel drives U. S. Steel piles to form cells. Barge-mounted rig swings Vulcan hammer actuated by an Ingersoll-Rand compressor.

Ten-inch Jaeger pump powered by an International Diesel de-waters the cofferdam enclosure from a hoist-held platform. Water discharge is into the Monongahela River.

Caterpillar D7 equipped with LaPlant-Choate blade grades a level working site. Background bridge will one day be dismantled.

cells of which the dam is composed. With connecting arcs between them, a continuous wall 40 feet thick and comprising the west and south sides was fashioned. U. S. Steel MP-112 piling, driven an average of 53 feet, was used for both the cells and connecting arcs. Along the river bank and forming the east side of the enclosure, flat interlocking MZ-32 piling was used.

Of the 65,000 lineal feet of piling totaling 1,600 tons, the 51-B was used to drive about one-half. The major portion of the remaining half was handled by a Waukesha Diesel powered Lorain 820, with a steam powered barge-mounted Bay City also lending a helping hand. All three rigs employed Vulcan pile-driving hammers and Ingersoll-Rand compressors.

Convenient Water Route

After the 51-B, perched on the bank, had the first cell completed, Casey took advantage of the excellent water course transportation at hand. Floated down the river in the familiar steel deck barges, unwashed sand and gravel which was used for fill was quickly and conveniently brought to the scene of operations. A dredge-clam, swinging a yard and three-quarter bucket, then transferred the fill from the barge to the cell.

As soon as the first cell was filled in, Casey mounted the Lorain on it to begin driving pile for the second cell, to be built out into the river immediately adjacent to the first. The same procedure was followed to drive the piling for the third cell.

Meanwhile, with 100 feet of boom (including 25-ft. jib), the 51-B was barge mounted to begin work on corner cell No. 9, on the diagonal extremity from the first. After each of the cells had been connected by arcs composed of identical piling, fill for the 40-ft. wide barrier was brought up to approximately 50 feet, leaving about three feet of piling protruding on the river and enclosure sides only, adjacent piling having been severed using cutting torches and Hobart welders.

To create a level working foundation, a D7 Caterpillar tractor with La Plant-Choate dozer blade was on hand to spread and level the fill unloaded from the barges by the dredge-clam and Bay City steam machine.

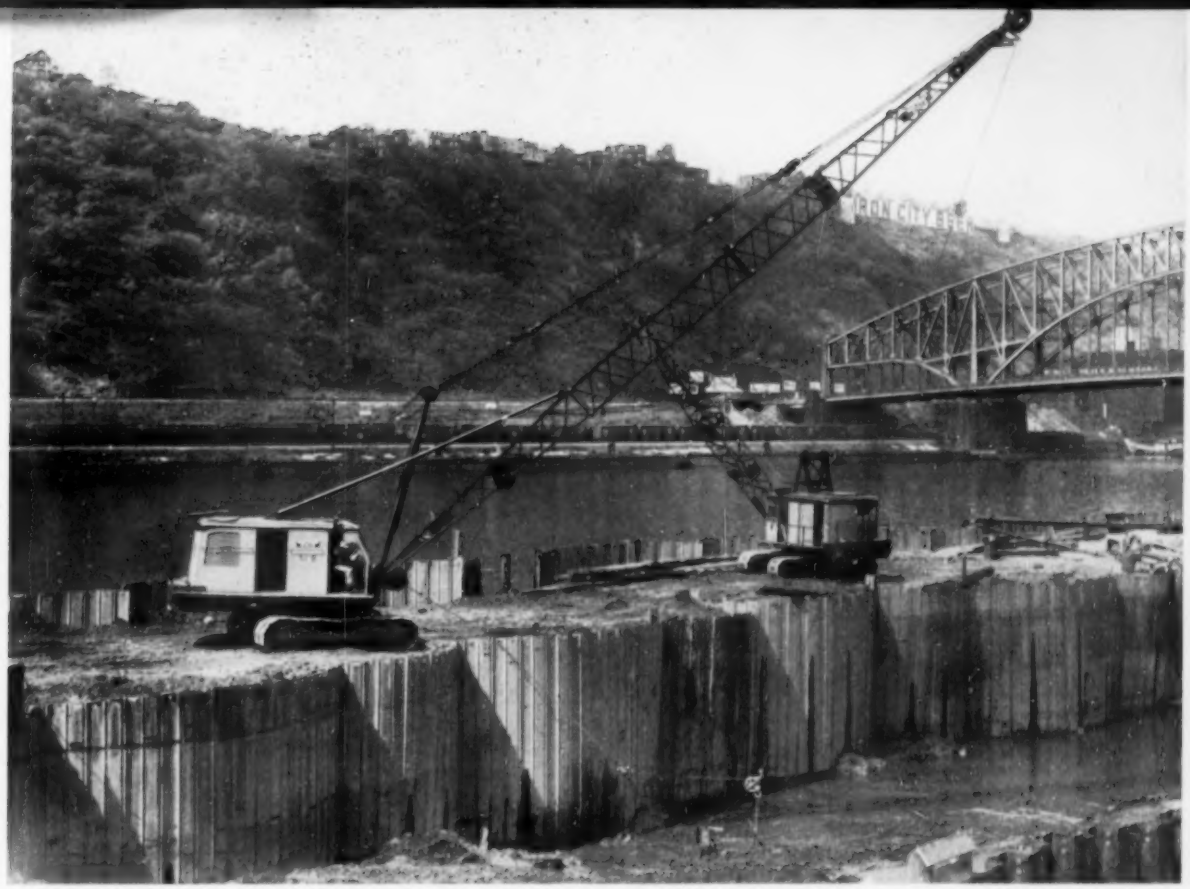
The sand and gravel fill was floated down the river in barges propelled by Diesel pushers which Casey had built themselves, and therein lies a story in itself. With a supply and yard base located 10 miles up the Allegheny River, the company brought into play a unique method of material and equipment handling.

From his modern house-trailer headquarters on the job site, Frank Scrano, job superintendent, picked up his phone and called the base: he needed a clamshell bucket for the 51-B, and he needed it right quick, too, for the big machine which was to begin excavating for the footing of the first pier. Within two hours the Diesel powered pusher, with the clamshell bucket mounted on a small barge in front, was seen rounding the river bend and was at the job in short order. Had a truck been used, the heavy and congested traffic on the point would not only have materially slowed the delivery, but would have wasted fuel.

When Excavating Engineer visited the scene, the coffered enclosure was almost completely de-watered, baring the grey-black bed of the Monongahela—testimony to the coal laden hills of West Virginia which it drains. The little water remaining was rapidly being sucked up and spewed over the side of the dam into the river by a 10-in. Jaeger with International Diesel engine. The Jaeger had handled most of the de-watering, but a Continental powered Red Seal CMC also contributed.

The 51-B, swinging a 2-yd. Red Arch dragline bucket, moved on to the back wall to start digging for the first pier. The D7 Cat was cleaning up and re-leveling the access road along the bank. The job's expected completion date is mid 1955.

Allen D. McCombs, Sr., is president of the John F. Casey Co.; H. G. Cranston is director of equipment and material; Robert H. Carew is chief construction engineer; Frank Scrano, construction superintendent. Eric Jones is resident engineer for Pennsylvania.



Here the 51-B rigged as dragline swings a 2-yd. Red Arch bucket to de-muck the cofferdam. Dam required 65,000 feet of piling.

Clamming out a sump for pumps is this Lorain 820 powered by a Waukesha Diesel. Note that short arcs connect main dam cells.

To build modern highway through heavily wooded, rocky terrain, power shovels like this 2½-yd. Bucyrus-Erie 54-B were used.

Flathead's Rocky Highway

by Ray Day

They're whipping half a million cubic yards of hard rock excavation to begin rebuilding Montana's west shore highway around beautiful Flathead Lake 50 miles south of Kalispell.

FIFTY miles south of Kalispell, Mont., where US 93 winds a twisting course around the scenic west shore of Flathead Lake, one of the most important reconstruction programs in the annals of the Montana State Highway Commission is beginning. All winter, big Bucyrus-Erie power shovels belonging to F & S Contracting Company of Butte have eaten through the massive limestone hills. By mid-August of this construction season, another new 4.6 mile section will be added to the modern part of this main north-south highway.

Nilson-Smith Construction Co. of Great Falls, Mont. also is adding a new section just south of the F & S Contracting Company job.

Montana roadbuilding in the mountainous sections of the Treasure State has always been notoriously difficult, and the Flathead's west-shore reconstruction is no exception. Out of 558,740 cubic yards in the F & S $547,000 contract, an estimated 475,000 cubic yards is rock . . . hard, dense, heavy Siyeh limestone similar to the massive bedrock underlying Hungry Horse Dam not far north from Flathead Lake. But in spite of usually severe winters in northwestern Montana, the F & S equipment and crews have battled through all but the worst days and nights, often working 16 hours a day. As a result of their labors, the job is now ahead of schedule and well out of danger.

Reconstruction Badly Needed

Reconstruction of the west shore highway has long been one of the worst needed jobs in the Kalispell division. US 93 has long been a main north-south arterial highway, carrying interstate and even international passengers between southern points and the Glacier National Park area. The highway also carries a great deal of summer Canadian tourist traffic. Along the Flathead's west shore the curving, dangerous alignment with its short sight distances had long been obsolete.

Three years ago, a new State secondary road was finished around the east shore. While it has pulled considerable traffic away from the U. S. highway, it has also pulled enough heavy truck traffic to endanger the secondary route. For this reason it has become vital to rebuild the whole west shore highway to 1954 standards, including criteria of alignment, pavement, and bearing values. And despite overpowering obstacles in the way of hard rock excavation, Montana's engineers and F & S construction crews are getting the job done.

The rebuilt road will be a 2-lane highway suitable for today's 70-mph passen-

ger automobiles. The F & S contract calls for first-stage construction, including such items as clearing and grubbing, drainage, excavation, and gravel base course material. Later on, further contract work will be let—probably in the late summer of 1954, according to Division Construction Engineer Ray Spurzem—to round out a finished highway.

Design features on the F & S job include a roadbed 33.5 feet wide, with 16 inches of granular base course material and six inches of select crushed rock base. These heavy thicknesses are necessary to compensate for traffic loads expected on this highway in the future, under freezing and thawing conditions. From the subgrade up, the various courses of material get a crown of .02 per foot to provide for drainage.

Ingersoll-Rand wagon drill and companion Ingersoll-Rand Gyro-Flo compressor punch small diameter holes down through blocky rock formation.

Plans call for varied slopes. For example, 1½:1 slopes are specified for cuts over 20 feet deep; 2:1 in cuts 10-20 3:1 in cuts from three to 10 feet deep; and 5:1 in cuts three feet or less. Side slopes of 4:1 are specified for fills less than five feet high, and for fills more than five feet, plans call for 1½:1 slopes. Plans also specify two feet of widening for fills five to 10 feet, and 3 feet for fills over 10 feet high. There is plenty of this variable work, too, because the deepest cut is 105 feet, with 78 feet the maximum fill height.

Granular cushion course material, gravel base, and designated borrow are being used on top of the grading work to round out the F & S contract.

Clearing and grubbing all trees and stumps was first order of business. Here's one of two dozer-equipped Cat D7's assigned to 60-acre clean-up.

60-Acre Clearing Job

When construction crews moved in late last fall to start the job, a sizable clearing and grubbing assignment stood in the way. Montana officials had decided to use as much of the old right of way as possible, so in many cases it was necessary to clear trees and burn brush while traffic passed by along the old road. In several cases, in fact, traffic stopped for flagmen while dozers shoved stumps and brush across the highway to the fires.

The 200-foot right-of-way was thickly covered with ponderosa pine, spruce, tamarack, and stubby brush. It called for experienced logging, so a subcontract was let for this item to J. W. Merz of Columbia Falls, Mont. Merz, an experienced logger whose men have often hung tractors by the heels from "yoyo strings" on steep inaccessible montain slopes, considered this job sufficiently routine to push through in conventional fashion.

Using two Caterpillar D7's with dozers to pile brush behind a felling gang with two Homelite chain saws, Merz shoved that item through in short order. Most of the 60-acre clearing job was out of the way before the first winter rain

Operator of B-E 54-B shovel jiggles dipper to ease oversize into Euclid. It's not hard to see what machines were up against.

and snow. This left the right of way clean and ready for the installation of the 24-in. corrugated metal drainage culverts, generally placed at natural ground level or slightly below at the base of the fills.

Job For High Explosives

The great depth of cuts, coupled with the amazing predominance of solid rock on the job, practically dictated the immediate move-in of a sizable amount of drilling equipment and high explosives. The job had been bid on the assumption that about 70% would be solid rock, but by mid-April it was apparent that 90% would be a closer estimate.

The rock formation is a massive heavy lime formation, blocky and seamed enough in some places to give real trouble. Drilling equipment has been divided into three spreads. The first spread consists of a heavy-duty Joy pneumatic drill, powered by an Ingersoll-Rand 600-cfm Gyro-Flo compressor. Both machines are mounted on a Caterpillar D8 tractor. This machine will drill 3½ and 4-in. diameter holes and, using 2-in. drill steel, has already drilled some 60-ft. powder holes on this job.

The second drilling machine has been assembled by Eugene Engineering Co. of Eugene, Ore., and consists of an Ingersoll-Rand X-71 drifter, powered by a Ingersoll-Rand Type 75 air compressor. This machine, with 20 feet of steel chain on its boom, has enough headroom to allow 14 feet of travel. It frequently drills 30-foot holes.

The third drill is an Ingersoll-Rand X-71 FM-2 wagon drill of conventional make, mounted on rubber tires, and powered by an Ingersoll-Rand 315-cfm Gyro-Flo compressor. This machine is used principally along slope lines, in shallow drilling, and the restricted places harder for the larger drills to reach.

Frequently, working 16 hours a day with the help of Kohler light plants, all these machines have combined to turn in some excellent drill footage. Two hundred fifty feet of 3½ to 4-in. hole per 8-hour shift is not infrequent for the Joy machine. Three hundred feet of 2½-in. diameter hole can be figured as a fair average for the conventional wagon drill, and 400 feet of 2½-in. hole in the

same period is the average for the Eeco-assembled machine.

Joy drill bits have been used primarily for the Joy machine, with Ingersoll-Rand Carset and Brunner-Lay Rokbits on the other two machines. The Carset bits particularly turned in a brilliant performance. Between the 15th of December and the first of April, before the Rokbits were tried, the Eeco machine drilled 26,983 feet of hole, and the Ingersoll-Rand wagon drill put down 24,891 linear feet. The Carset bits, sharpened personally by Drilling Superintendent Paul Judd, often gave 3,000 to 4,000 linear feet of drilling. In more than 51,000 linear feet of drilling in that time, only 22 bits had been worn down to the point where their discard was being considered.

Peak Footages Always Good

Peak footages in one 8-hour shift for these drills were always good. The Eeco machine turned in 900 feet on its best day, and the Ingersoll-Rand wagon drill got 600 feet. Peak for the larger-diameter Joy drill was 450 feet. Between the 15th of December and the first of April it put down 32,069 feet of drill hole. The total of nearly 84,000 linear feet of hole in this period was calculated to break an average of 5¼ cubic yards for each linear foot of hole drilled.

Although the lime rock varied somewhat, 3½-in. holes by the Joy drill were put down in an average of 12 feet, with their centers staggered. Along slope lines, this was sometimes cut down to 10, or, in fair shooting, was lengthened out to 14. The other two machines, with smaller-diameter drill bits, put down their holes on 8-ft. centers. The Joy machine used drill steel in 20-ft. lengths, and as high as three lengths were used on a single hole. The wagon drills generally drilled from 20 to 30 feet deep.

According to Drilling Superintendent Paul Judd, the introduction of larger diameter drill holes has reduced the amount of powder labor. On these large holes, where volume loading can be done, a powderman and his helper have loaded a ton of powder in as little as 20 minutes. It has been possible to do this dangerous job with considerably less labor than was formerly the case.

The large holes are being loaded first by springing the bottom with ½-case of Atlas Gelodyn powder. The pocket this springing develops will then hold 3½ cases of powder. These large-diameter holes are then loaded with Primacord detonating fuse attached to the bottom stick of gelatin, and filled to within eight feet of the ground surface with Atlas 40% Flo Dyn bag powder. Heavy stemming is then tamped in on top of the powder charge. A considerable amount of duPont and Red Cross bag and stick powder also is being used.

Men put down explosives in powder hole.

Stick powder is used only where the holes are wet or otherwise unfavorable for bag loading.

Wagon drill holes are similarly loaded, with the exception that they are not sprung previous to blasting. They are column loaded, bringing the powder up within three feet of ground surface. In all cases, the shots are wired in series,

Joy drill sinks 4-in. diameter powder holes on 14-ft. centers. Hughes rotary oilfield type bits are being used with this drill.

Here are, left, Timekeeper P. Kennedy, Powder & Drilling Super. P. Judd, and General Super. J. Cameron. Right: Road is cut through solid rock.

with 40 holes to a circuit. Judd uses a busline shooting system, with No. 16 copper wire—slightly larger than average—which is especially well suited to long, strung-out shots. It puts electricity into both ends of a blast at once. To cut slopes to best advantage, he also uses duPont delay caps in from zero to 10 millisecond increments. He has touched off as high as 15 tons of powder per shot with this method, using a duPont CA-48 R.D. blasting machine to set off the charges.

Since the new work intersects the old highway at five points, there are plenty of flagmen available to stop traffic safely when the shots are pulled.

Strangely enough, most of the shots have fractured some of Montana's trickiest rock satisfactorily, and there has been a minimum of secondary shooting. There is a small 105-cfm Ingersoll-Rand compressor and jackhammer on the job for secondary work, but with the exception of one particularly bad cut in which blocky chunks of lime rock stuck out, the blasts have pulled everything out in shape so the power shovels can pick it up. Sometimes the 2½-yd. Bucyrus-Erie shovels' dippers in heavy digging have to pick up rock almost that size, but the operators are good enough to pull that difficult stunt successfully. The oversize rocks are used in the base of high fills.

One of the unusual aspects about the powder work was the fact that it started almost simultaneously with the arrival of power shovels. Most heavy rock jobs are organized to give the drillers a head start, but in this case, both operations started practically together. In spite of this apparent handicap, the drill crews double shifted and were soon far out ahead of the loading and hauling units. When a safe distance had been established ahead, drilling went back to a single shift so crews could finish out together. It was nicely timed and efficient, considering the factors involved.

The heavy blasted rock in each of the cuts, neatly piled after the shots, called for plenty of power so the material could be moved out at a high rate of production. Under the general supervision of John A. Cameron, this part of the work was organized as efficiently as the drilling and powder.

Cameron used three principal loading and hauling spreads. A Bucyrus-Erie 51-B shovel was used with three Koehring Dumptors, and two Bucyrus-Erie

54-B's, each with a 2½ cubic yard Bucyrus-Erie dipper, and three 10-yard Euclid end-dump units. Two 15-yard Euclids were added later to help keep the heavy-loading 54-B's busy.

In general, the balance points on the job had been arranged so there was little long-haul work. Average hauls were only 1000 feet long, and it was exceptional when material was hauled farther than ¼-mile. Cameron arranged each of his 54-B's in the heavy, rough hard-rock excavation, assigning a major cut to each machine. Work by these machines began at the north end of the project, and moved generally uphill toward the south end. Working against 20 to 30 foot faces, these machines made four passes at the 10-yard Euclids, and six at the larger machines. It was not unusual for a 54-B to load from 185 to 210 Euclid loads per 8-hour shift, accounting for 1,800 to 2,000 cubic yards of broken rock.

Koehring Dumptors scuttle between rock fill and 51-B. Contractor used 51-B—with its smaller dipper—to good advantage in shallow work.

Both 54-B's were assigned to straight loading at a high rate of speed, and neither machine was tied up for fine slope dressing, shallow bank work, or other loading where it was impossible to make a swing with a full dipper without undue effort. That part of the operation was the assignment drawn by the 51-B shovel, along with its fleet of Koehring Dumptors. The 51-B, in easier digging with its smaller dipper, was used to excellent advantage in the shallow work. A double spotting system was used in each spread, when possible, to get the best peak loading from each machine.

Cameron did several things to boost shovel production. For example, he used a man at each machine to spot the trucks in most efficiently, and to keep loose rocks thrown out of the way to prevent excessive wear and damage to rubber tires. Occasional passes also were made at each shovel by one of the dozers on the project, (there was a D7 and two International TD-24's), so that the maneuvering area would be as clean as possible. Flagmen, stationed at each of the five highway intersections, gave hauling equipment the highest priority. And, with the exception of what service work the oilers could perform, while the machines were running, all major service work was done during idle hours.

Bury Large Rock

It was never too easy to make a satisfactory embankment fill out of the broken rock. Specifications called for maximum 3-ft. lifts with this material, with definite compaction. But it was frequently necessary to bury exceptionally large rock, so the base lifts were sometimes thickened at no detriment to the roadbed. These lifts were shaped by end-dumping the material from Euclids, and shoving it over the edge with one of the dozers. The fills were raised in definite lifts, so that as much compaction as possible could be developed by the passage of heavily-loaded hauling machinery.

The broken rock embankments were finally topped out as near to grade as possible by careful selection of finer material by the 51-B shovel, whose companion Koehring Dumptors then placed it in thinner lifts toward the surface. The Montana State Highway Commission has designated a nearby borrow pit of granular material to top out this subgrade. Cameron expects to move in a Pioneer rock plant to crush and size this material to 3-inch-minus size. He

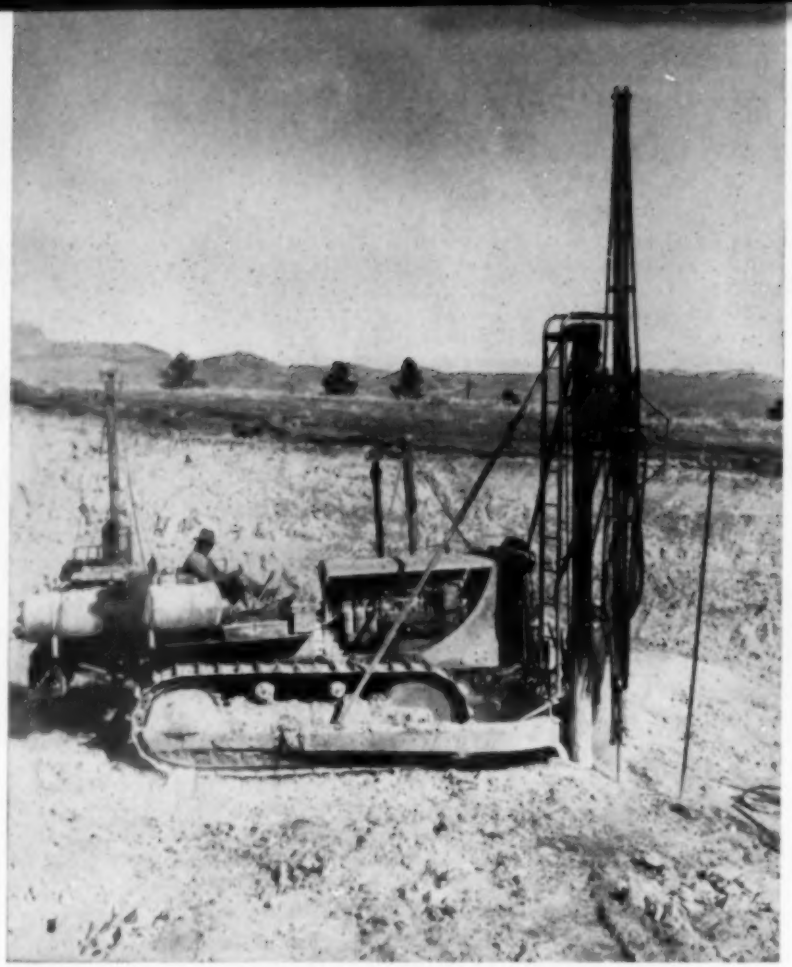
expected to start this work sometime in May, as soon as more grade was built ahead, and planned to use the same Euclids for the haul of this ballast. The material will be placed in several lifts, blade mixed by the Caterpillar No. 12 motor grader on the job, watered if necessary, and rolled down tight by pneumatic rollers.

Good Equipment Upkeep

It has long been the policy of F & S Contracting Co. to take excellent care of its equipment, not only when the units are in the shop for overhaul, but while they are on the job working. This part of management has been organized to a high degree.

Almost all incipient failures in any piece of equipment on the F & S roster are cushioned by the necessary spare parts already on hand at the jobsite. These parts are ordered just as soon as they seem necessary, and frequent inspections are made to determine that information. It costs a contractor money and jobs are delayed when broken down equipment stays off the line a minute longer than necessary . . . especially when companion equipment is also idled.

For routine service work, F & S uses a truck mounted Alemite and fuel system. This portable GMC unit, handled by a grease monkey, goes to work at noon and does most of the lubrication work during the four hours after the machines are idle. Fuel was supplied direct to the job by a Conoco dealer in Polson. A special No. 1 grade of Diesel fuel was used for the General Motors engines in compressors and Dumptors. No. 2 grade Diesel fuel was used in the Caterpillar engines, the Buda engines of the 54-B's and other engines where fuel grade is not too critical. There is a full time welder on the job, who builds up shovel dipper lips and teeth, hard-faces track rollers, and does other similar preventive maintenance work. This mechanical force, just as surely as any of the engineers or other construction people, is contributing a large share in the big job which is being done to make the west shore highway a modern speedway.



Cat D8-mounted drill and compressor unit was built at Oregon shops of Eugene Engineering Co. It mounts Ingersoll-Rand X-71 drifter and I-R Type 75 compressor.

Cat D7 tractor and dozer gets rid of oversize rock in bottom of fill. Rock embankments were topped out as near to grade as possible by careful selection of fines.

Principal surpervisory people for the F & S organization included John A. Cameron, general superintendent; Paul Judd, powder and drilling superintendent. Floyd Drumheller and Ivan Rasmussen, mechanics; and Paul Kennedy, timekeeper.

For the Montana State Highway Commission, William Hebert was resident engineer, reporting to Division Construction Engineer Ray Spurzem at Kalispell. All work by the Montana Highway Department is under the general supervision of Scott P. Hart, State Highway Engineer, assisted by S. B. Sanders, construction engineer.

PHOENIX "ROUNDUP"

IH Stages the Greatest Earthmoving Show on Earth

New, complete INTERNATIONAL line introduced to world-wide distributor organization at Industrial Power "Roundup"

Promptly at 9:00 A.M. recently, a barrage of aerial bombs exploded over the desert south of Phoenix, Arizona.

The explosions signaled the start of the greatest show ever presented by an individual heavy equipment manufacturer—the introduction of the new INTERNATIONAL Industrial Power line.

The International Harvester Industrial Power "Roundup" was a three-day presentation of more than 80 pieces of heavy earthmoving equipment, materials handling machinery, diesel and carbureted engines and power units in the new, expanded INTERNATIONAL Industrial Power line.

But the 612 INTERNATIONAL Industrial Power Distributors, their bankers and associates from the United States and 24 foreign countries got more than a first look at the big parade of IH Industrial Power.

They saw the answer of IH to the present and future requirements of one of the world's biggest industries—construction.

As an IH official told them, "There's no foreseeable end to the present heavy construction boom. We are determined to anticipate the demand and to build machinery necessary for the continual economic development of America and the free world."

HIGH ON A HILLTOP, Bill Hall and his new, 155 drawbar horsepower INTERNATIONAL TD-24 crawler tractor, command a view of IH's 4200-acre Phoenix Proving Grounds, site of the recent INTERNATIONAL Industrial Power "Roundup."

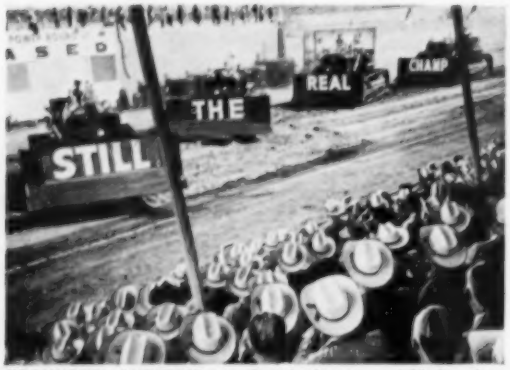
INTERNATIONAL HARVESTER

INTERNATIONAL®

MAKES EVERY LOAD A PAYLOAD

On the pages following, you will see the whole story, in pictures, of this great demonstration event. Just turn the page to start your own visit to the INTERNATIONAL Industrial Power "Roundup."

PHOENIX "ROUNDUP"



"ROUNDUP" AUDIENCE gets first look at new 155 drawbar horsepower INTERNATIONAL TD-24, world's most powerful crawler. The TD-24, with matched hydraulic or cable-controlled blade, handles the toughest "pioneering" jobs.

PROUDLY PROCLAIMING THEIR SUPERIORITY in their horsepower field, a trio of INTERNATIONAL TD-18A crawler tractors park in front of the "Roundup" grandstand for audience inspection and approval.

TWO NEW PRODUCTS FOR ACCELERATED EARTHMOVING pass the "Roundup" grandstand. Rubber-tired earthmover is the INTERNATIONAL 2T-75, with 18-yard heaped capacity and a top speed of nearly

"Every Load

At the Phoenix "Roundup", INTERNATIONAL showed its distributors a lineup of "phased" equipment specifically designed to meet the requirements of the construction industry.

Included in the long list of equipment were new crawler tractors, ranging in size from 20-ton mountain-moving giants to basement excavators; high-speed units that haul half a railroad car of earth each load;

LARGEST OF THE SPECIAL PURPOSE MACHINERY displayed at the "Roundup" was this INTERNATIONAL TD-24 crawler with matched Superior sideboom. TD-24 boom tractor will lift up to 45 tons.

READY TO TEST A NEW INTERNATIONAL 2T-75 is IH vice-president Harald T. Reishus. Instructions for the run are given by C. E. Jones, assistant sales manager. Holding stop watch at the right is sales manager I. P. Payne. Cactus in picture is famed Arizona saguaro.

25 mph. Pusher is the new 200 horsepower INTERNATIONAL TD-24 torque converter crawler tractor. These are the largest units in the line, which now includes more than 80 pieces of equipment.

a Payload"

a torque-converter tractor that operates as smoothly as chauffeur-driven limousine; equipment equally adept at stockpiling bags of concrete or crates of china; and power units capable of lighting a medium-size city.

By putting the proper piece of equipment on each phase of the earthmoving job, INTERNATIONAL Distributors can show their customers how production profits rise while operating costs fall.

THE NEW INTERNATIONAL TD-24 TORQUE CONVERTER gets a thorough going over by a group of distributors. With same dimensions as conventional TD-24, all equipment that fits the conventional TD-24 fits the torque converter model.

FAST-STEPPING GIANTS PERFORM FOR CROWD. Boss of the heavy earthmoving jobs is this largest crawler tractor-scraper combination manufactured today. Crawlers are the new 155 drawbar horsepower INTERNATIONAL TD-24s. Partner in this big earthmoving act is the new INTERNATIONAL B-250 a 27½-yard heaped capacity push-loaded scraper.

Turn the page for more "Roundup" news

CHARGE OF THE HEAVY BRIGADE. Part of the equipment used in the "Roundup" leaves the assembly "corral" for demonstration sites on IH's Phoenix Proving Grounds.

Demonstration—Cornerstone of IH Distributor Sales

In only one respect did "Demonstration Day" differ from any other day at the IH Phoenix Proving Grounds: grandstands were erected at each of 10 demonstration sites where distributors could see equipment in action.

Other than that, everything was the same. All equipment went through standard demonstrations and test runs.

Phoenix is only the first "torture" session for IH earthmoving equipment. Additional tests and demonstrations are conducted, year round, at other IH proving grounds and on actual jobsites.

A lengthy and expensive process, but one that assures contractors of this fact: INTERNATIONAL Industrial Power means more power, more speed, greater durability and less operating expense on any earthmoving or heavy construction job.

Your INTERNATIONAL Industrial Power Distributor will gladly arrange a demonstration of the model in the new, complete INTERNATIONAL line "sized" for your job. Let him prove that putting INTERNATIONAL Industrial Power equipment on the job puts more profit in your pocket.

INTERNATIONAL HARVESTER COMPANY, CHICAGO 1, ILLINOIS

TAKING ADVANTAGE OF A COFFEE BREAK are (l to r) Governor Howard Pyle of Arizona, "Roundup" host, Harald T. Reishus, vice-president, International Harvester and John L. McCaffrey, president.

INTERNATIONAL HARVESTER

INTERNATIONAL

MAKES EVERY LOAD A PAYLOAD

News from the Field

Reports Construction Taking 20% of Steel Shipments

Construction and contractors' products are more than ever a mainstay of the steel industry, according to a recent report from the American Iron and Steel Institute.

These market groups received about as much steel (three million tons) in the first quarter this year as in the same period last year. Their percentage of total shipments was higher than at any time since 1940. They required 20% of the direct shipments of finished steel in March this year. In February, the percentage was 19.3, in January it was 18.7, and for last year it was 17.1.

When shipments of finished steel products are totaled for the 14 years 1940 to 1953 inclusive, the 125.8 million tons received by the construction and contractors' product groups (including railroad and oil and gas construction) exceeds the total for any industrial category and is surpassed only by the 144 million tons shipped to warehouses.

Construction's well sustained activity is featured by rising trends in highway projects, including bridges; and a sizable volume of projects involving office buildings; schools; shopping centers; auditoriums and churches; and homes.

The statistics of the steel industry show that shipments of heavy structural shapes were about 120,000 tons higher in the first quarter of this year than in the same part of last year. Shipments of steel piling were slightly higher. Shipments of plates and reinforcing bars were slightly below the totals in the first quarter of 1953.

Caterpillar Plans Use of Atomic Energy Products

Plans to use the products of atomic energy in research work at Caterpillar Tractor Co., Peoria, Ill., have been announced by J. M. Davies, director of research.

Radioactive materials will be used to accelerate longtime endurance tests on parts, and are expected to give test results not obtainable by more conventional methods. Parts tested will be sent to Oak Ridge to be made radioactive.

"For example," Davies said, "we might use radioactive materials to test piston ring wear. By running a radioactive ring in an engine we will build up radioactivity in the crankcase oil, thus giving a direct indication of the wear on the ring. We can complete the test with the aid of a Geiger counter."

Caterpillar's first step in working with atomic energy will be to use comparatively low levels of radiation intensity.

Start Operations at New Canadian Hydroelectric Plant

The first of two units of the Waneta hydroelectric power station, each consisting of a 120,000 hp water wheel driving a 75,000 kw generator, was recently placed in operation at Waneta, British Columbia. The new plant, designed and constructed by Stone & Webster Canada Limited in collaboration with Stone & Webster Engineering Corporation, Boston, is owned by The Consolidated Mining and Smelting Company of Canada, Limited, Trail, B. C.

Power provided by the new station, located on the Pend d'Oreille River just north of the U. S. border, will feed into the network of the Company which already owns and operates four hydroelectric plants in British Columbia.

The dam is a gravity type structure providing a head on the water wheels of 210 feet. Its maximum height is 250 feet with a length on top of 950 feet. The spillway allows for a maximum flow under flood conditions of 280,000 cubic feet per second through nine gates. Space in the power house is provided for two additional units of the same capacity as the two now being installed.

Novel Pipeline Plan Pushed in Arkansas

Through applications filed with the Arkansas State Public Service Commission, the MidSouth Gas Co. and eight East Arkansas municipalities asked permission to enter into a novel agreement whereby the cities would build pipelines and distribution systems and lease them to the company for 20 years.

Involved in the eight separate applications filed with the commission would be 68.5 miles of pipeline and $949,400 in installations.

One pipeline, 20.7 miles, would extend from Marion to Parkin, Earle and Crawfordsville. The other, 47.8 miles, would extend from Marion to Tyronza, Lepanto, Turrell, Marked Tree, and Trumann. The company has pipeline con-

Continued on page 40

Heavy-Duty
FLOOD LAMPS
For Better Light • Longer Service • Lower Cost
Especially Designed for Efficient Service on
Shovels • Excavators • Drag-Lines • Roadbuilding Equipment
Locomotive Cranes • Tractors . . .
Metal Spinning Division
PHOENIX PRODUCTS CO.
4723 N. 27TH ST. • MILWAUKEE 16, WIS.

Write for Illustrated Bulletin.

News . . .

Continued from page 39

nections at Marion.

The company and municipalities, according to the applications, propose to enter into an agreement whereby the company would act as agent for them in procuring materials and constructing the lines and distribution systems; the municipalities then would lease the lines and systems to the company for operation for 20 years with purchase option.

The applications indicated that the approximate pro rata costs to the communities, which would pay by means of bond issues, would be: Tyronza $50,900, Lepanto $118,900, Turrell $39,700, Marked Tree $198,600, Trumann $321,100, Crawfordsville $37,500, Earle $117,700, and Parkin $65,000.

The plan would permit the company to serve the communities without investing any of its own funds in the system. It also would permit the communities to obtain natural gas service just as soon as the systems could be built.

Easy pneumatic operation boosts crane output 33%

This one Westinghouse Controlair® Valve replaced a steam throttle valve and four manual clutch levers. It saves time and effort, and increases productivity of the crane.

AIR is now used to operate the throttle and clutches of this 50-ton locomotive crane. As a result, scrap metal, iron ore, and freight are handled faster at the Port Covington yard of Western Maryland Railway Company.

Westinghouse Air Brake Company supplied a complete pneumatic system for this crane, from control valves to air compressor. This new system replaced a jumble of awkward manual controls that slowed up operation and reduced the operator's efficiency. Now, with easy-operating Westinghouse Control, the operator can handle *one-third more* material a day.

We can improve *your* cranes, hoists, and other diesel-powered equipment. Write for full details.

Westinghouse Air Brake
COMPANY

INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNSYLVANIA

Manufacturers of air compressors, pneumatic cylinders, actuators, air control devices of all kinds, engineered pneumatic control systems and front end loaders.

Factory Branch: Emeryville, Calif. Distributors throughout the United States . . . See your Classified Directory. Distributed in Canada by Canadian Westinghouse Co., Ltd., Hamilton, Ontario.

Bucyrus-Erie Promotes Jaeger to Post of Publicity Manager

Promotion of Martin B. Jaeger to publicity manager was announced recently by Bucyrus-Erie Company, South Milwaukee, Wisconsin. He succeeds Emory M. Heuston, who left the company in June to join an industrial advertising agency in Cleveland, Ohio. Heuston had been publicity manager since 1945.

M. B. Jaeger

When named to his new position, Jaeger was assistant publicity manager, a post he held for three years. He joined the company in 1943, serving as a publication editor for two years, as advertising copywriter for a similar period, and as copy chief for four years. As publicity manager he will have responsibility for direction of the company's product advertising and publicity programs.

E. M. Heuston

Before joining Bucyrus-Erie, Jaeger held administrative and instructional positions in the field of secondary edu-

cation. He is a 1938 graduate of the University of Wisconsin, also earning an advanced degree there in 1939. He is 38 years old and a native of Wisconsin.

New Toll-Audit System Expedites Vehicle Collections

A new toll collection and audit system which provides greater operating efficiency, increased revenue protection, and more equitable vehicle classification for turnpikes and toll roads has been developed by International Business Machines Corporation. The new system, a combination of photo-electric "eyes," specially-designed weighing treadles, and toll recorders, requires no special procedures on the part of motor vehicle operators, since all weighing and counting operations are performed while the vehicle is in motion. Even when following bumper to bumper, vehicles may be processed without delay.

When a vehicle approaches the toll booth, a special weighing treadle built into the traffic lane's pavement separately weighs each axle, and a photoelectric detector counts the number of axles. These weights are retained by load cells and electronic storage units for vehicle classification.

At the same time, the toll attendant, having inserted a fare card in the IBM toll recorder, determines by visual inspection the number of axles on the vehicle and depresses a corresponding key on the recorder. Depression of the proper axle key automatically totals the individual axle weights and registers the vehicle's classification, along with other necessary information, on the fare card. The class of vehicle is determined when the individual axle weights are added together by the depression of the proper axle key.

An axle group indicator atop the toll recorder lights up to display the axle pattern of the vehicle if the operator depresses the wrong axle key, and the recorder locks to prevent improper validation of the fare card. The attendant, at a glance, may correct his error by depressing the proper axle key.

The fare card, indicating the amount to be paid for the trip, is given to the vehicle operator, who presents it at the exit gate with his toll.

At the exit interchange, the equipment automatically reweighs the vehicle and compares the weight class punched by the entrance recorder with weight class determined by the exit classifier.

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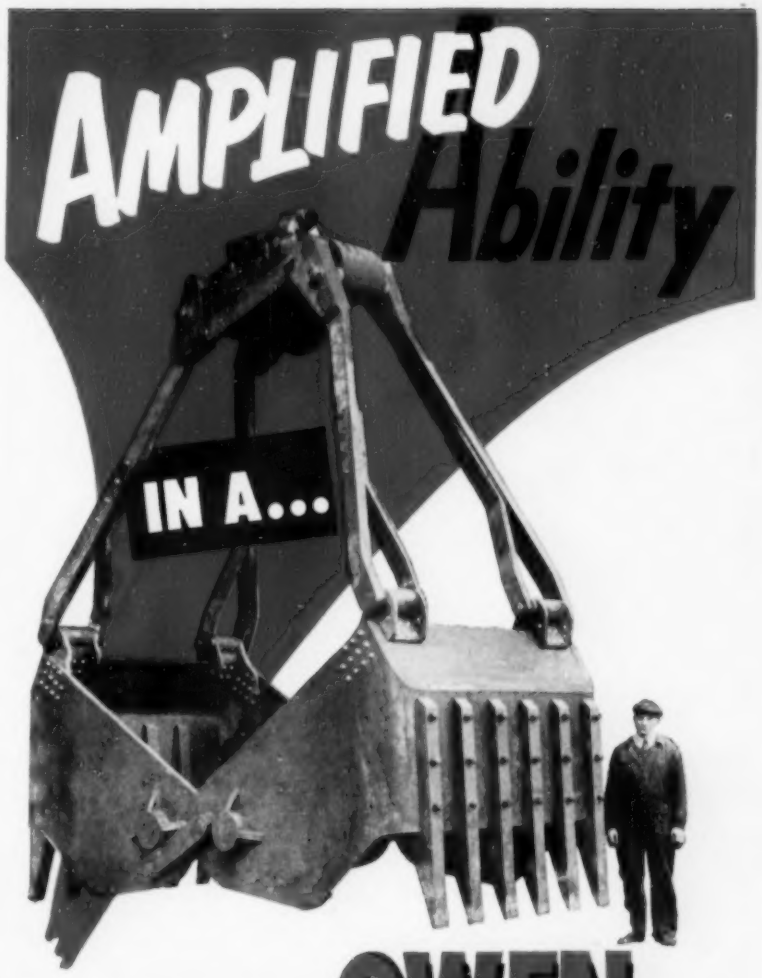


● 13 TON OWEN

The stresses and strains to which especially large machines are subjected are more than proportionally greater than machines of conventional size. Proper designing challenges the knowledge and skill of the engineer.

An interesting example of skillful designing and sound construction is this 5 Cu. Yd. Owen Bucket built to handle dredging of large blasted rock.

In general design and principle of operation it is typically Owen. But it has two main shafts to cover an unusually large area when open, teeth almost as large as a man and increased power sufficient to fully utilize its tremendous capacity.

If you have an uncommon need you can depend upon Owen to build a special bucket that will render the same satisfactory service you have long enjoyed from standard Owen Buckets.

A MOUTHFUL AT EVERY BITE

THE OWEN BUCKET CO.

6095 Breakwater Ave., Cleveland 2, Ohio

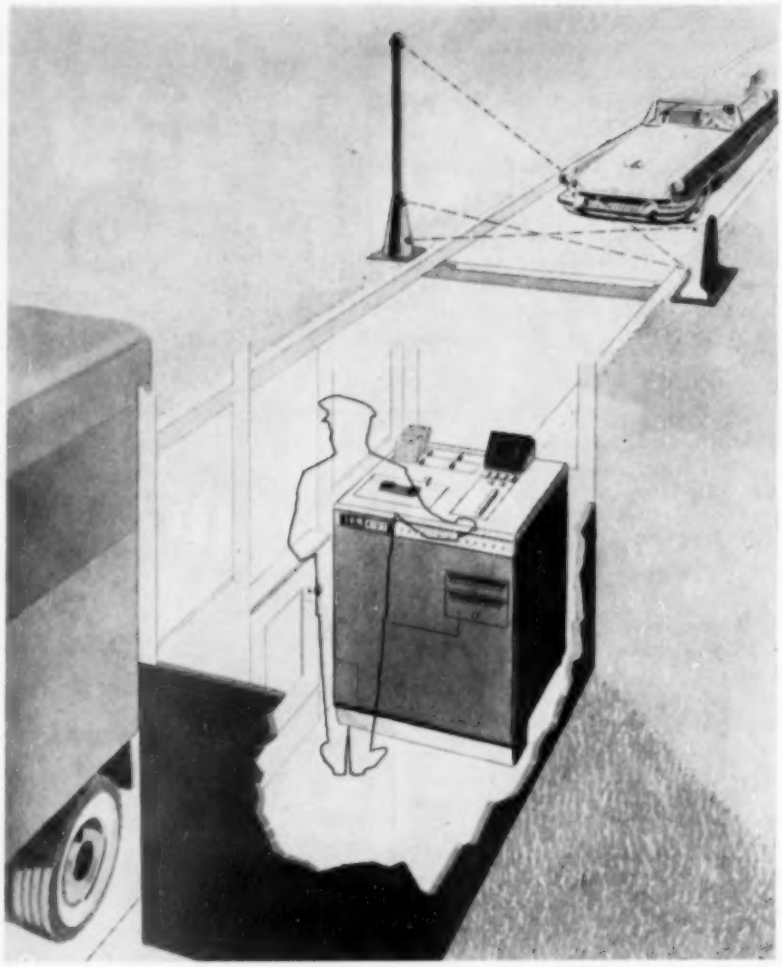
BRANCHES: NEW YORK, PHILADELPHIA, CHICAGO, BERKELEY, CALIFORNIA, FT. LAUDERDALE, FLORIDA

Continued from page 41

It also reads the number of axles and the time punched by the entrance recorder, thus enabling the toll collector to note any misuse or violation of toll tickets.

The information recorded in the fare cards by both the entrance and exit recorders makes practicable excess time detection, overweight protection, and individual control of transactions. Without requiring additional key-punching of information into these cards, the central auditing may be completed by IBM's Type 650 Calculator. This new "brain," in one pass of the fare cards, will compute all revenue, compile traffic density data, total charges by account number, and provide a means of quickly auditing collectors' daily work reports.

The Pennsylvania Turnpike and Ohio Turnpike Commissions have placed orders for this new toll collection and audit system.



Artists's idea of vehicle lane in which IBM's new toll collector has been installed. Passenger car approaches photoelectric grouping device and weighing treadle.

No Lost-Time Injuries Incurred on River Project

The McCarthy Improvement Co. of Davenport, Ia., completed Stage I of the new 1200-ft. Mississippi River lock at Keokuk, Ia., without incurring a single lost-time injury.

About 200,000 man-hours were expended in constructing Stage I phase of the new lock, costing approximately $1.6 million and which consisted of: 1,200 lineal feet of cofferdam, 974 lineal feet of guide wall, three 25-ft. 8-in. x 30-ft. mooring piers, erection of Government field office, demolition of old two-story brick field office, and other related activities. About 22,706 cubic yards of concrete, 28,936 cubic yards of rock excavation, 9,837 cubic yards of common excavation, 10,045 cubic yards rock fill, and 7,316 cubic yards of common, compacted, fill were involved.

These men are proud of the McCarthy Improvement Co. safety record. Left to right are: Norman E. Allen, project engineer; Col. Nelson Leclair, Jr., district engineer; Rowe Klingebiel, district safety engineer, and Thomas P. McCarthy, project engineer.

During peak activities, 150 employees were working on the project. The contractor commenced work in December 1952 and completed the contract in about 530 days.

Move 3 Million Yards of Dirt on Maine Turnpike Section

Pushing close to $2 million worth of heavy-duty equipment, Carl Ranks, superintendent for Yonkers Contracting Co. of Yonkers, N. Y., will move a total of three million yards of dirt and 100,000 yards of rock by the 1st of Decem-

ber on a stretch of the second section—Portland to Augusta—of the Maine Turnpike, a 4-lane highway divided by a natural medial strip.

Yonkers Contracting holds a $2,120,000 contract for the grading and drainage of an 11-mile stretch outside the twin cities of Lewiston-Auburn. The stretch starts at the Androscoggin river and runs to the Maxwell School road in Webster.

The job—primarily earth excavation and borrow—was scheduled to roll the beginning of May. Two weeks of steady, unseasonable rain delayed operations to make the December completion date the only problem.

On the job are 15 Allis-Chalmers HD-20's and two HD-15's—all equipped with Gar Wood cable tipdozers and power control units. They are being used for stripping, for push-loading 17 Allis-Chalmers and Le Tourneau motor scrapers, for spreading fill, and for drawing sheepsfoot rollers for compaction of the road base. Ten bottom dump trucks and two shovels round out most of the other equipment.

Maine is one of 10 states now operating modern toll highways. The rolling terrain and the large amount of earth moving needed in constructing the turnpike require plenty of heavy-duty equipment—in this case equipment equal in value to the cost of the job.

Caterpillar Cited for Highway Safety Promotion

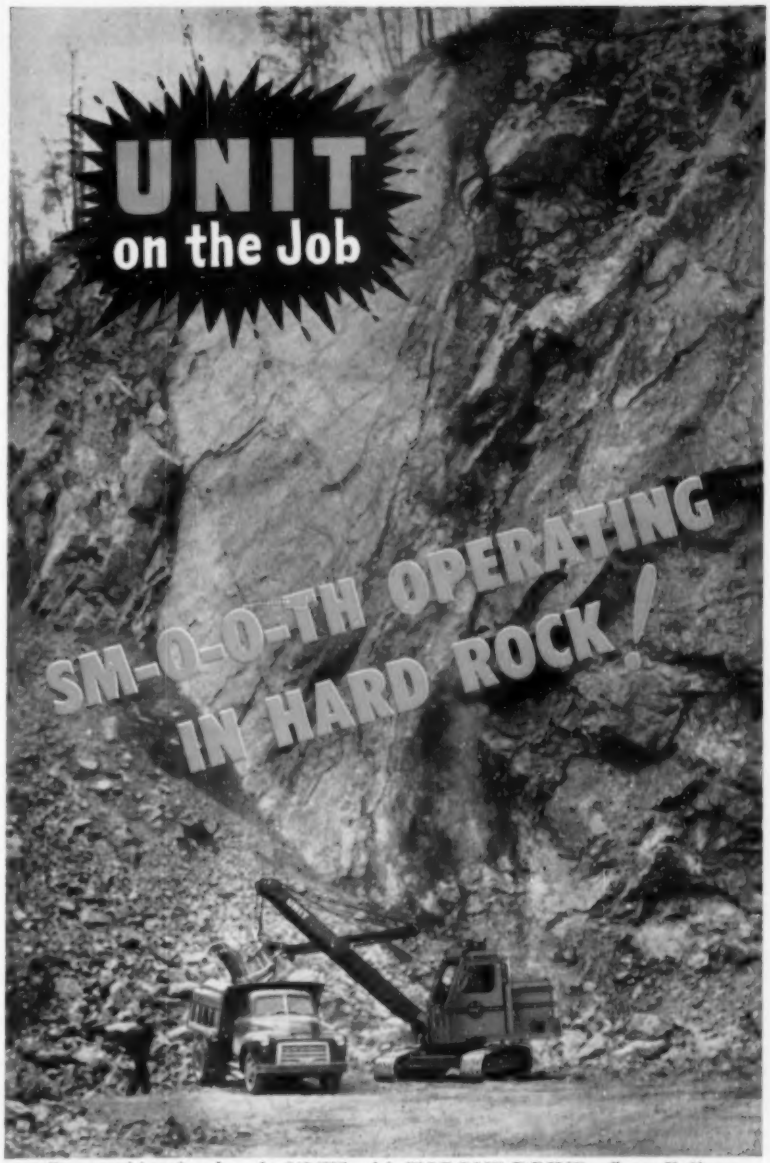
The National Safety Council has awarded Caterpillar Tractor Co. its 1953 Public Interest Award for the Company's "initiative and skill" in using mass communication media in the fight against automobile accidents.

Ned H. Dearborn, president of the Council, in announcing the non-competitive award said, "It is designed to allow us to express in tangible form our appreciation for exceptional service to safety."

In 1953, as it has for many years, the advertising division of Caterpillar devoted nine of its 12 institutional type ads to the general subject of highway safety.

Excavating Engineer Microfilm Is Now Available

A microfilm edition of all copies of the 1953 Excavating Engineer is now available. The microfilm of Volume 47 sells for $2.70. Address orders to: University Microfilms, 313 N. First St., Ann Arbor, Mich.



For working hard rock, UNIT with TORQUE DRIVE offers: Full, steady power without stalling engine — Increased lugging power — Elimination of shock loads on machinery. Investigate these advantages and other UNIT features. Write for Bulletin No. U-1153.

UNIT CRANE & SHOVEL CORPORATION

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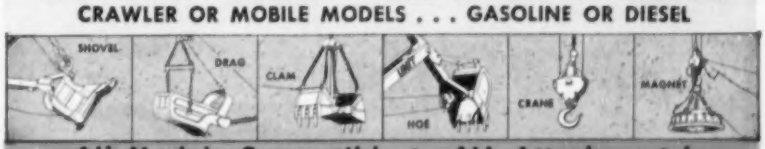
UNIT

½ or ¾ YARD EXCAVATORS...CRANES UP TO 20 TONS CAPACITY
CRAWLER OR MOBILE MODELS . . . GASOLINE OR DIESEL



All Models Convertible to ALL Attachments!

Equipment You Ought to Know About

Diesel Engine

Manufacturer: Detroit Diesel Engine Division, General Motors Corp., 13400 W. Outer Drive, Detroit 28, Mich.

Claims: Changes in design have increased the output of General Motors' single 6-110 Diesel engine to 300 hp maximum and 230 hp continuous.

The increases, totalling 25 and 17 hp, respectively, provide extra power which will be especially useful in heavy duty hauling vehicles, shovels, cranes, and other installations subject to sudden load increases. Basically the power increase in this two-cycle Diesel is the result of freer "engine breathing" and higher engine speeds. Freer breathing has been accomplished in part by increasing the number of ports in the cylinder liners. Also the ports have been grouped together in partially overlapping pairs to form larger, figure "8" shaped openings.

With the increased scavenging capacity thus provided and because the inherent strength of all structural parts allowed it, maximum engine speed has been increased from 1800 to 2000 rpm. The continuous operating speed is now 1800 instead of 1600 rpm. According to Division spokesmen, these increased engine speeds were set only after thousands of hours' operation proved them to be consistent with long engine life expectancy.

Other changes which contribute to greater operating efficiency and longer engine life include a new "high valve" injector similar to that recently introduced on the Division's Series 71 models, new roller bearing idler gear mountings, and larger piston struts to add strength and rigidity to the pistons. An SAE #1 flywheel housing size is also being offered which permits the use of additional standard transmissions without the use of an adapter ring.

Crawler-Tractor

Manufacturer: International Harvester Co., 180 N. Michigan Ave., Chicago 1, Ill.

Claims: The Industrial Power Division of I-H has just announced an increased horsepower rating for the TD-24, largest crawler tractor in its complete line of industrial power and earthmoving equipment. The present

production model of the TD-24, with added horsepower, is rated at 190 engine horsepower and 155 drawbar horsepower. Maximum drawbar pull is rated at 40,000 lbs. and operating weight of this new model is 42,884 lbs.

The power plant for the TD-24 is the International D-1091 Diesel engine with a bore and stroke of 5¾ by 7 inches and a rated governed speed of 1,400 rpm. Like all International Diesels, this engine has inbuilt gasoline conversion starting.

Features such as synchromesh transmission with eight speeds forward and reverse, planet power steering, and hydraulic steering control, all of which were standard in the previous models of the TD-24, are incorporated in the increased-power model.

The TD-24 is designed to work with scrapers up to 27½ cubic yards capacity, angle blade dozers up to 14½ feet, and straight blade dozers up to 12¼ feet.

Tire-Tracks

Manufacturer: Union Chain & Manufacturing Co., Sandusky, O.

Claims: The Galanot Tire-Track, a traction and flotation device comparable to a crawler mount, provides a maximum of flotation and tractive effort under the most extreme conditions for almost all types of rubber tired vehicles. The Tire-Track is designed to fit a range of tire sizes from 6:00-15 to 18:00-26.

Built with variable shoe lengths and with versatile chain arrangements, the Tire-Tracks can be applied to dual or single tires on either single or tandem

HENSLEY
SAVES
the Original
COST...
When the going is TOUGH!
You'll get faster work, less equipment damage, and lower cost per unit-hour when your crawler is Hensley-equipped!
And what's more — there's no need for a separate rig for each job — USE double utility Hensley Equipment.
LIGHTWEIGHT, HEAVY DUTY RIPPERS. Fit all small, medium and large dozers. Penetration 8" to 18". Exclusive tool adapts grade bar keeps tool and bar corner cuts.
HEAVY DUTY ROCK END BITS for D-6, D-7 and D-8. Engineered for penetration and lasting wear.
D-6, D-7, D-8 and HD-7H, HD-20 DUTY TOOTH TRACK ROLLERS and roller parts — machined in rail true with a minimum of wear.
Write for free Catalog today!
P. S. Dealerships available in some areas — check today!
HENSLEY
EQUIPMENT COMPANY

axles. With a connector plate lacing varying from 1 x 2 to 6 x 6 and in special cases even higher, the Tire-Tracks will handle the lightest loads to gross loads as much as 60,000 lbs. With their diversity of design and load ratings, Galanot Tire-Tracks have been applied on large oil rigs, mobile cranes, logging carriers, large military carriers, trucks, mobile shovels, pay loaders, graders, and trailers.

The tire-tracks can be easily and quickly installed, according to the manufacturer, using the new specially designed installation tools, it is now possible for two men to install a set of tracks on a unit in an average time of half an hour—less on light units and longer on large units.

The new Tracks offer increased tractive effort and larger flotation area. By selection of the proper track, traction and flotation can be increased in direct proportion to gross weight of vehicle.

The Track is designed to provide a rigid beam construction of the Track between axles on tandem axle applications. This rigid beam construction prevents the Track from putting any strains or tensions on wheels and axles and, in fact, decreases the strains and tensions that would ordinarily be encountered under adverse conditions without the Tracks.

The shoes and flexure members are designed so that the Track is self-cleaning. There is a minimum wearing action on the tires.

There is a greater versatility of application with a large selection of shoe sizes allowing Tracks to be mounted on almost any pneumatic tired vehicle. It is possible in many cases to revert to a smaller tire size on the vehicle due to increased flotation and traction provided by the Tracks.

Catalytic Muffler

Manufacturer: Oxy-Catalyst, Inc., Wayne, Pa.

Claims: A new catalytic muffler effectively reduces the noxious and irritating components of 4-cycle Diesel engine exhausts. The new device, called the Dieseler, attaches directly to the engine exhaust manifold and burns by catalytic action the noxious carbon monoxide and odorous hydrocarbon fumes in exhaust gases.

Applications are seen for the Dieseler on 4-cycle Diesel trucks and buses, construction and materials handling equip-

Continued on page 50

EXCESSIVE END BIT WEAR CAN BE STOPPED

One example of the 150 types of end bits manufactured by ESCO, this Shasta type end bit is used on dozers for punching out work on difficult terrain.

ESCO End Bits are cast of special alloy steel for longer life on any job!

Why tolerate excessive end bit wear and downtime? Economy minded operators of dozers, scrapers and graders are finding *ESCO* End Bits lick excessive wear and last longer on either rocky or abrasive operations.

ESCO End Bits are *cast* of special alloy steel, designed for maximum shock and wear resistance under *any* dozing conditions. And because *ESCO* End Bits are *cast, not* rolled or forged, metal thickness and wear resistance are located where they are needed most. Blade weight and shape are correct for maximum bite, and wear. For example, note the shape and distribution of metal on the *ESCO* Shasta type end bit illustrated above.

ESCO makes 150 types of end bits to fit dozers, scrapers, or graders of all major manufacturers and they cost no more than ordinary end bits. Keep *your* production higher with *ESCO* End Bits. For details, see your nearest *ESCO* dealer, or write direct.

ESCO

Offices and Warehouses: Honolulu, Hawaii; Houston, Texas; New York, New York; Los Angeles, San Francisco, California; Seattle, Spokane, Washington; Centralia, Pennsylvania; Eugene, Oregon; Salt Lake City, Utah. In Canada: Vancouver, British Columbia, and Toronto, Ontario.

ELECTRIC STEEL FOUNDRY CO.

2143 N. W. 25th AVENUE, PORTLAND 10, OREGON 712 PORTER ST., DANVILLE, ILL.

Advertisement

Pictures of the month . . . *by LeTourneau-Westinghouse*

Paving clean-up at 25 mph — Shown above is what D. W. Winkelman Co officials call the cheapest method they know of for cleaning up the rocks and other debris which accumulate after paving and shoulder-grading. Tool used is a 7-yd D Tournapull. After boulders and smaller rock have been windrowed by a grader, the "D" comes along at 20 to 25 mph. Scraper blade is lowered to "float" on the roadway. Each pass self-loads 100 to 150 ft of windrow. Daily output, estimates Winkelman's super, is 3 times that of a front-end loader and grader. Photo was taken on Winkelman's $7,278,000 New York Thruway job near Syracuse.

Replaces 3 crawlers — One Tournatractor handles clean-up work formerly assigned to three 144 hp crawler-tractors at this open-pit iron mine. Unit serves 3 to 5 draglines and shovels, helping to keep ore production at 15,000 tons daily for owner. Material handled ranges from rock and limonite ore (weighing over 4,100 lbs per cu yd) to sand, clay, and gumbo. Big, rubber-tired machine also blades and cleans haul roads . . . dozes overburden . . . cuts ramps to loading areas . . . clears dragline roadway . . . hauls equipment . . . pushes trucks through soft going. After 3,000 hours work in abrasive materials, 21.00 x 25 tires still retain a substantial part of their original tread (see photo). Says Mine Superintendent, "Tournatractor can't be beat in open-pit mining."

. . . with performance reports from around the world

Cut repair, fuel costs — Despite loading of heavy, abrasive stone and rock, 2 LeTourneau-Westinghouse Rear-Dumps have eliminated nearly all hauler maintenance at Reno Construction Co's limestone quarry, Overland Park, Kansas. Company officials report these rugged Rear-Dumps have far fewer breakdowns than dump trucks they replaced. Also, they claim lower fuel costs and higher hourly output. Moving overburden 725 ft to dump, each machine hauls 7½ yds of cap rock in 4 minutes. Moving screened rock 800' to hopper, each handles 600 tons every 10 hour shift.

Mountain climber — 16,000 ft up, rain, snow and wind tested the stamina of men and machines as 3 C Tournapulls and a Tournatractor built a dam in the Peruvian Andes. Rubber-tired units drove 143 miles to job on treacherous, 11½' mountain roads.

Self-loads 9 yds — Traveling down 18% grade, C Tournapulls self-load 8½ to 9 bank yds of sandy loam overburden in 45 to 50 sec. Output for 3 "C's" on 3500 ft cycles is 288 to 324 bank yds per 50-min hour. Owners, Elgin-Butler Brick Co, Austin, Tex, also use Tournapulls for mining clay. Here each "C" is push-loaded with 12 yds; 3 "C's" move 432 yds hourly on 2100 ft cycles.

Better roads to Cape Cod — Two more lanes for Massachusetts' heavily-traveled Mid-Cape Highway are being built through hills of ocean-deposited sand and rock. This C Tournapull is one of 2 speeding dirtmoving for Campanello & Cardi Construction Co, Hills Grove, Rhode Island. Top speed of these units is 35 mph.

Handles 3 scattered assignments —One Tournatractor for Stewart & Nuss Inc, Fresno, California, regularly handles all dozing requirements of 3 plants (aggregate, asphalt, and sand) scattered in a 6-mile area. Getting 3 yds of crushed rock or sand per pass, it feeds hopper with 47 loads (141 cu yds, about 200 tons) hourly. Says Foreman John Hart, "In maintaining haul roads, Tournatractor does in 30 minutes what it would take a crawler a half-day to do." Says Operator Lee Hunter, "Tournatractor is the best muck-moving rig in the business."

(continued on next page)

Advertisement

Pictures of the month . . . *by LeTourneau-Westinghouse*

219 tons overburden hourly — Hauling clay, gravel, and sand overburden from a silica pit in Wedron, Illinois, each of these LeTourneau-Westinghouse Rear-Dumps completes seven 3600′ cycles per 50-minute hour. Despite 400 ft of 6 to 10% grades leading out of pit and 150 lbs rolling resistance on haul, the 3 units deliver combined total of 162 pay yds (219 tons) hourly. Says A. O. Anderson, foreman for Wedron Silica Co, Chicago, owners of the equipment, "These Rear-Dumps are easy on upkeep. Lubricating takes less than 10 minutes a day." Says Operator Oliver Brooks, "They're easy to handle. Brakes are fine, too."

Tires outlast tracks, 4 to 1 — This Tournatractor has worked 3800 hrs in sand for Miami Crushed Stone Co, Florida. Original tires still have plenty of tread. Crawlers, on same job, need new tracks after 650 to 900 hrs. Tournatractor boosts production, too! Pushing sand 150 ft, it makes 2 trips to crawler's 1.

Learn to operate in ½ day — In East Pakistan, a crew of unskilled laborers was hired to run 10 electric-control D Tournapulls for a 3,000 acre leveling job. After a few hours instruction and practice on these machines, they had learned operation sufficiently to be put to work. In fact, operators had grown so competent on fingertip controls, the 10 Tournapulls hauled and dozed all 1,332,000 cu yds involved "well ahead of schedule."

5 times the yardage — S. A. Cummings, Compton, Calif, reports 2 C Tournapulls hauled 21 loads (210 pay yds) of clay and silt hourly on 2800 ft cycles to terrace housing sites in Inglewood. "C's" moved 91% of yardage in 27 days . . . 30,480 yds each . . . compared to 6,040 yds for a crawler and 18-yd scraper.

Advertisement

. . . with performance reports from around the world

1 does work of 4 — "My one D Tournapull has replaced 3 trucks and a ¾-yard shovel on this job, and eliminated wages of 3 hired men," says Sam Coffman of the Bowie Sand and Gravel Co, Bowie, Texas. His 7-yd "D" strips the pit . . . selectively self-loads sand and gravel . . . stockpiles material.

Wheeled "race horse" — Like the horses which will run here at Vernon, N.Y., a 35 mph C Tournapull churns up clouds of dust on this 300,000-yd leveling job. "C" helped D. W. Winkelman Inc, Syracuse, level 240 acres for a ¾-mile track, 1500-car parking lot, and 4500-capacity grandstand.

11 months, 1,137,500 yds of dirt — In 11 months, 7 LeTourneau-Westinghouse Rear-Dumps (foreground above) and 12 LeTourneau-Westinghouse Bottom-Dumps moved 1,137,500 cu yds of river-bottom sand and gravel for the Inn River power project in Austria. Hauls varied from 1600 ft to 3 miles, one-way. When completed, this will be one of the largest hydro-electric plants in Europe. Over 5,100,000 yds of dirt will be needed for the 32,750 ft of levees which will line the reservoir. The main dam will be 920 ft long and 790 ft high — 60 ft higher than Hoover Dam in the U.S. It will provide 513,000,000 kw hours of energy yearly.

Economical on 700 ft push — Replacing 2 crawler-tractors for Marietta Concrete Corp, Ohio, Tournatractor pushes sand and gravel 50 to 700 ft to dragline for loading. Tournatractor, with its dozing speeds of 3½ to 8 mph, easily equals output of both the big crawlers which could work only at 1 to 2 mph. Unit works so fast, in fact, it frequently has time to shuttle across highways to neighboring plants to stockpile aggregate and handle scattered dozing jobs on a rental basis. After 1,700 hours of year-around use, original tires are only slightly worn. And owners report maintenance costs have been considerably lower than they had been with crawler-tractors. For more information on Tournatractor, or any of the other tools shown on these pages, write LeTourneau-Westinghouse Company, Peoria, Illinois.

Tournapull—Trademark Reg. U.S. Pat. Off. Tournatractor—Trademark Pic-682-G-c

New Equipment . . .

Continued from page 45

ment, and stationary Diesel engines. In such installations, according to the manufacturer, the Dieseler can greatly reduce and in most cases completely eliminate the annoyance factor of the exhaust of any 4-cycle Diesel engine that operates fairly steadily at 60% of rated load or more.

First installation of the Dieseler catalytic exhaust was made on an International Lodover tractor shovel at the Coplay Cement Manufacturing Co., Coplay, Pa. The catalyst exhaust, installed

on the front of the tractor-shovel atop the engine, is connected directly to the engine exhaust manifold. It is a twin-flow, heavy-gage steel assembly containing eight catalytic sections. Over-all dimensions of this Dieseler are 7-in. x 12-in. x 27-in.

Each catalytic unit is a compact porcelain structure containing 73 slender porcelain rods that are coated with the catalytic agent—alumina and platinum alloy. As the hot engine gases flow across these rods, they are catalytically burned to carbon dioxide and water vapor. Because of the streamlined cross section of the rods, back pressure is negligible.

Lightweight Piling

Manufacturer: L. B. Foster Co., P. O. Box 1647, Pittsburgh 30, Pa.

Claims: A new lightweight interlocking steel sheet piling, making use of a high-strength box-type section, has been announced as available in two standard sections and in two gauges.

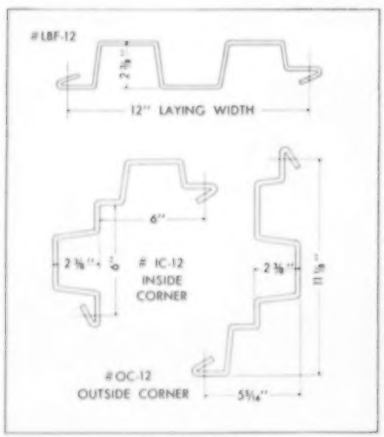
The piling is recommended for installations which have been handled in the past with wood sheeting. These include shore protection, pier protection, sewer trenches, building excavations, abutments, bulkheads, cut-off walls, and cofferdams. It is not considered competitive with standard steel sheet piling.

The lightweight piling has an inherent advantage over wood sheeting in that it can be used repeatedly, according to the manufacturer. In addition to its economy, it can be easily handled in the field and can be stored easily between uses.

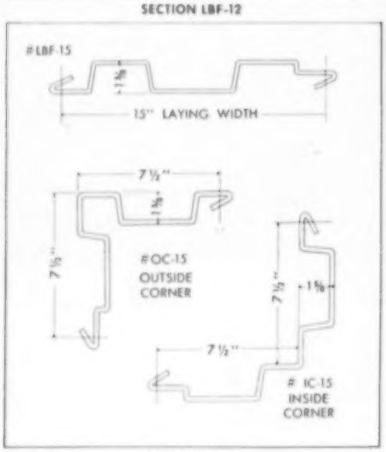
The lightweight piling is being manufactured in eight and 10 gauge steel and in 12 and 15-in. laying widths. It is available in any length up to 36 feet. The piling is cold rolled from hot rolled sheets.

The interlock is a new design which permits two sheets to be lapped together to form a watertight interlock. In other words, it is not necessary to slide one sheet into another for its entire length as in the case of standard steel sheet piling.

The box-type corrugation simplifies the use of bracers, walers, and other types of reinforcement. Another important advantage, the manufacturer points out, is that the lightweight piling can be placed without the use of a rig. In many instances, the piling can be pounded in place by a maul or small air or steam hammer.



SECTION LBF-12



SECTION LBF-15

Foster has also developed corners for each of the sections and gauges and a specially-designed driving head which is available on a rental basis. Pulling tongs have also been designed for this specific use.

Field Office Trailers

Manufacturer: Contractors Trailer Co., 97 Eagle St., North Adams, Mass.

Claims: The new CTC 1954 Model Field Office Trailer has been specifically designed from its basic rugged construction to the final detailing in painting. The release of the new model is not a result of conversion from other uses or converted interiors on exterior house trailer construction.

Use of the Field Office Trailer has not necessarily been intended for jobs

that are out in the wilderness or in some other impractical location where it would seem impossible to utilize any other type of transportable field office arrangement. According to the manufacturer, the trailer can prove economical, adaptable, and versatile whether the

job is across the street or across the continent.

The most popular CTC trailer model is the 35-footer. Next most popular size is 28 feet. Other sizes and lengths are available on special order. All Field Offices, regardless of length, have identical layout, construction features, equipment (except for differences due to length).

Trailer body is made from seasoned

Continued on page 52

The FINEST Crawler your money can buy!

NEW SCHIELD Bantam® MODEL C-35

it's the LOWEST PRICED Crawler with ALL THESE FEATURES!

9 ATTACHMENTS FOR DOZENS OF JOBS . . .

Bantams work with Lifting Crane, Drag, Clam, Back Hoe, Shovel, Pile Driver, Concrete Bucket and others . . . do more work on EVERY JOB . . . cut your equipment costs!

EASY . . . LOW COST TO MAINTAIN!

Bantam precision engineering, simple, rugged construction, fully accessible parts mean less down time, lower repair bills!

2-SPEED, INDEPENDENT TRAVEL

lets you lift, carry and place loads ALL at one time . . . means faster loading, stockpiling!

FIELD PROOF OF MACHINE VALUE!

Over 5,000 truck and crawler-mounted Bantams daily prove there's a place for this rig on every job, large or small! A Bantam is the most versatile "tool" you can own!

EASY TO MOVE FROM JOB TO JOB!

8' width with standard pads means NO SPECIAL TRAVEL PERMITS . . . low weight lets you move BANTAM on trailers pulled by any dump truck in your fleet!

HIGH SPEED CONTROLS, FAST LINE & SWING SPEEDS

enable operators to handle more yards per hour to get more jobs done fast!

CLIP . . . mail today for fast information about the BANTAM C-35

___Crane	___Concrete Bucket
___Dragline	___Pile Driver
___Back Hoe	___Magnet
___Clamshell	___Backfiller
___Shovel	___Grapple

Name_____ Title_____

Company_____

Address_____

City_____ State_____

Bantams also mount on Trucks & Carriers

⅜ yd., 6-Ton T-35

SB-EE-1

SCHIELD Bantam

COMPANY • 202 PARK ST., WAVERLY, IOWA, U.S.A.

World's largest producer of truck-mounted cranes and excavators!

New Equipment . . .

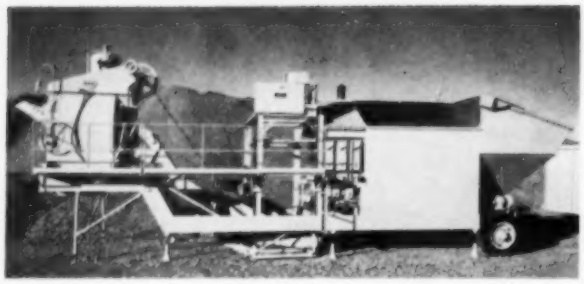
Continued from page 50

2x4's on edge 16-in. O.C. Joints interlocked, mortised, and screwed. Butt joints are angle blocked. Seams and moulded corners are water-proofed. Roof is all aluminum and cambered for drainage. Body exterior is .040 aluminum in extra large sheets, brake bent for strength, appearance, and warp-prevention.

Office interior is panelled with ¼-in. Birch plywood. Insulation is provided by complete fiber glass in roof, sides, ends, and floor. Entire trailer is vapor sealed. Will not form condensation.

There is a total of 24 windows including five full sets of picture windows. All windows open.

Included is a 36-in. x 74-in. removable drafting table. It has storage space beneath and cabinets under for flat storage of additional plans. Storage shelves are built in over desks at both ends of trailer as well as over drafting table. Large closet provides storage for clothes or instruments. Complete toilet-washroom is standard equipment on the field office trailer.



Batching Plant

Manufacturer: Auto-Crete Co., 612 Security Bldg., Phoenix, Ariz.

Claims: A new Arizona export is on the worldwide market after five years of field testing on western projects.

Engineered to make work cheaper, faster, and easier in all phases of concrete construction, the machine, called an Auto-Crete, is a self-contained portable concrete batching plant.

Backers are Del W. Fisher, president of Fisher Contracting Co., which has built many of the state's outstanding projects, and Thomas W. Kennedy, widely-known Arizona machinery sales engineer. The Auto-Crete was conceived and designed by Fisher and will be manufactured for national distribution by Allison Steel Co., of Phoenix.

The Auto-Crete requires only a two-man crew instead of the normal five to seven for similar setups. It has a high production rate, and provides uniform accuracy in concrete batching.

One of its outstanding features is mobility. Thirty four and a half feet long, it is 13 feet 4 inches high, and eight feet wide—all within legal highway limits. The plant can be towed anywhere with a 1½-ton tractor unit.

Three self-contained storage bins hold 12 tons each of sand and gravel and 176 cubic feet of cement. These materials are fed into the skip loader through electric controls — sand and gravel moved on conveyors and the cement through a screw jack and are weighed electrically.

Power for the unit's operation is provided by a gasoline engine driven electric generator. Production is 125 to 150 cubic yards of concrete per day.

More Profit in Every Digging Cycle with a RED ARCH Dragline Bucket

3 Types Available for Medium, Medium Heavy, and Heavy-Duty Digging. Sizes: ⅜- to 30-cu. yd.

Fast Penetration. Tough, sharp, correctly angled teeth and tapered front-to-rear design provide quick penetration, faster digging. Extra high arch means bigger loads.

Balanced Carry. Correct bucket balance cuts bobbing . . . reduces yardage-robbing spillage . . . makes faster cycles possible.

Clean Dumping. Smooth bucket interior assures fast, clean dumping. Minimum dirt carry-over from cycle to cycle means more dirt moved—greater profits for you.

2R54C

BUCYRUS ERIE South Milwaukee, Wisconsin

Volt-Ammeter

Manufacturer: General Electric Co., Schnectady 5, N. Y.

Claims: A new hook-on volt-ammeter believed to be the first with automatic scale changing, is designated the AK-5. The pocket-size unit is designed to measure current and voltage quickly and accurately. Its automatic scale changing feature entirely eliminates the possibility of reading the wrong scale for the application, according to company engineers.

It has a current range of 5/20/80/-350 amperes, embracing the extent of currents normally encountered in industrial and commercial circuits.

The instrument also measures ac voltage in three ranges (150/300/750) without auxiliary equipment, provides accuracy up to three per cent of full scale, and withstands a voltage breakdown test of 4,000 volts ac.

Dozer-Rooter

Manufacturer: Electric Steel Foundry Co., 2141 N.W. 25th Ave., Portland 10, Ore.

Claims: A completely new model of the ESCO Dozer-Rooter now enables operators to convert all tractors ranging from 40 hp to 155 hp to rooters. The new unit is designed for the 40 to 70 hp range with blade heights of 26 to 37 inches.

Specifically, the unit is intended for tractors of the D-4 to D-6, HD-5, and TD-9 classification. The manufacturer believes that it should be of great service to local general contractors, counties, municipalities, states, and other

Continued on page 54

"STILL GOING STRONG -after 16 years!"

These two early model LaCrosse low bed trailers were purchased by *RINGLING BROS. and BARNUM & BAILEY CIRCUS* in 1938. On the road 32 weeks out of every year, both trailers have performed yeoman service in transporting 13-ton tractors between trains and circus lots . . . and in moving other heavy equipment at various show sites. Between seasons, the trailers are used to haul all sorts of materials at the circus winter headquarters, in Sarasota, Fla. According to D. A. Blanchfield, Superintendent of Transportation, **"Maintenance costs on these two LaCrosse trailers have been NEGLIGIBLE through 16 years of hard use, which means they had to be built practically FOOLPROOF."**

So why pay more! Insist on dependable LaCrosse low beds — for extra years of trouble-free service—*at 5% to 25% saving in first cost!*

LC-31

Check Today!

LaCROSSE TRAILER CORPORATION, LaCrosse, Wis.

☐ Rush complete information on LaCrosse trailers:
☐ Specifications ☐ Prices ☐ Delivery
☐ Send name of nearest LaCrosse Distributor.
☐ We may buy a ..... ton trailer about ..... (date)

Name ..... Title .....
Employed by .....
Address .....
City ..... State .....

LaCROSSE
America's Favorite LOW-BED TRAILER

New Equipment . . .

Continued from page 53

governmental agencies doing street and road patching and repair, as well as to the owners of individual units such as loggers and agricultural operators.

Model 26 and Model 32, by which the new units are known, weigh 495 lbs. The original units, now known as Models 38 and 42, weigh 950 lbs. and are designed for horsepower range of 70 to 130 and above with blade heights of 38 to 50 inches.

The Buck Forte Dozer-Rooter consists of a tooth shank housing which mounts on the moldboard of a bulldozer by means of a special clamp used in combination with adapters and saddles which enable it to fit most popular makes of heavy-duty dozers. The rooter shank has four adjustments of ripping depths below the dozer's cutting edge and is equipped with ESCO box-type replaceable points.

Wrist-Action Dipper

Manufacturer: Bucyrus-Erie Co., South Milwaukee, Wis.

Claims: A new Hydrohoe attachment with wrist action has been developed to increase the utility and speed of the H-3 Hydrohoe—the manufacturer's all-hydraulic dragshovel.

The new Hydrohoe retains the basic advantages of the standard model but introduces a new additional digging force through a dipper that rotates in a vertical plane through an arc of 65° from a position of 25° ahead of the handle to 40° behind it.

The new dipper not only provides increased digging force, but also lessens spillage and improves ranges for clean dumping into trucks. It can dig vertical or undercut walls and trenches actually deeper than they are long. In addition, the operator can change the pitch or rake of the dipper teeth during the digging arc for the best cutting angle and can pry out rocks or expose pipe with less danger of pipe damage. Ability to make continuous passes without stalling results in more and fuller dippers.

When the dipper is rotated simultaneously while the digging ram is extended, the combined effort produces about 38 hp at the dipper teeth and a 50% increase in digging power (up to six tons of tooth force) may be obtained. The hydraulic ram controlling the wrist action is powered by the pump which normally supplies the swing bank.

The new wrist-action dipper increases machine effectiveness materially.

In place of the hydraulically operated earth ejector, the wrist-action dipper is arranged for automatic ejection. A stationary blade or door (optional) around which the dipper rotates ejects the sticky material.

The Hydrohoe, with or without wrist-action dipper, is offered either as a complete machine or as an attachment for current H-3 Hydrocranes. If desired to convert to wrist-action Hydrohoe, earlier models may be modified to incorporate recommended engineering changes.

Hard-Facing Alloys

Manufacturer: Crobalt, Inc., 2800 S. State St., Ann Arbor, Mich.

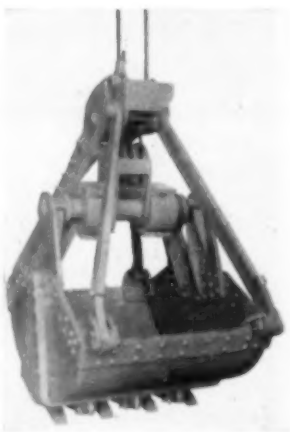
Claims: Three new cobalt-chromium-tungsten hard-facing alloys in welding rod form are known as Crobalite alloys. These materials are applied to steel and cast iron parts to provide high hardness and high resistance to abrasion, corrosion, oxidation, and impact. They retain these properties at red heat, can be heated to 1600° F. with no permanent loss of hardness, and are not affected by repeated heating and cooling.

These alloys are applied by oxy-acetylene torch or inert arc welding, either manually or by semi-automatic machine, using standard hard-facing procedures. They flow on readily in a uniform, slag-free layer, and bond firmly with minimum inter-alloying.

It All Depends on the BUCKET AT THE END OF THE LINE . . .

The bucket is usually less than one-tenth of the whole investment in your materials handling equipment. Yet, to get all the pay load you should on every pass depends more on the bucket than on anything else.

To be sure you have the right bucket for the job, let our field engineers look over your set-up. There's no charge, and their recommendations will help you get the most out of a major investment.



Write for BULLETIN 403, Dept. E74

FORMERLY ERIE STEEL CONSTRUCTION COMPANY

ERIE STRAYER CO.

SAME PEOPLE • SAME PRODUCTS • JUST A NEW NAME

974 GEIST ROAD • ERIE, PENNSYLVANIA

Another J&L First—

SpringKore WIRE ROPE

Combines Flexibility and Crush Resistance

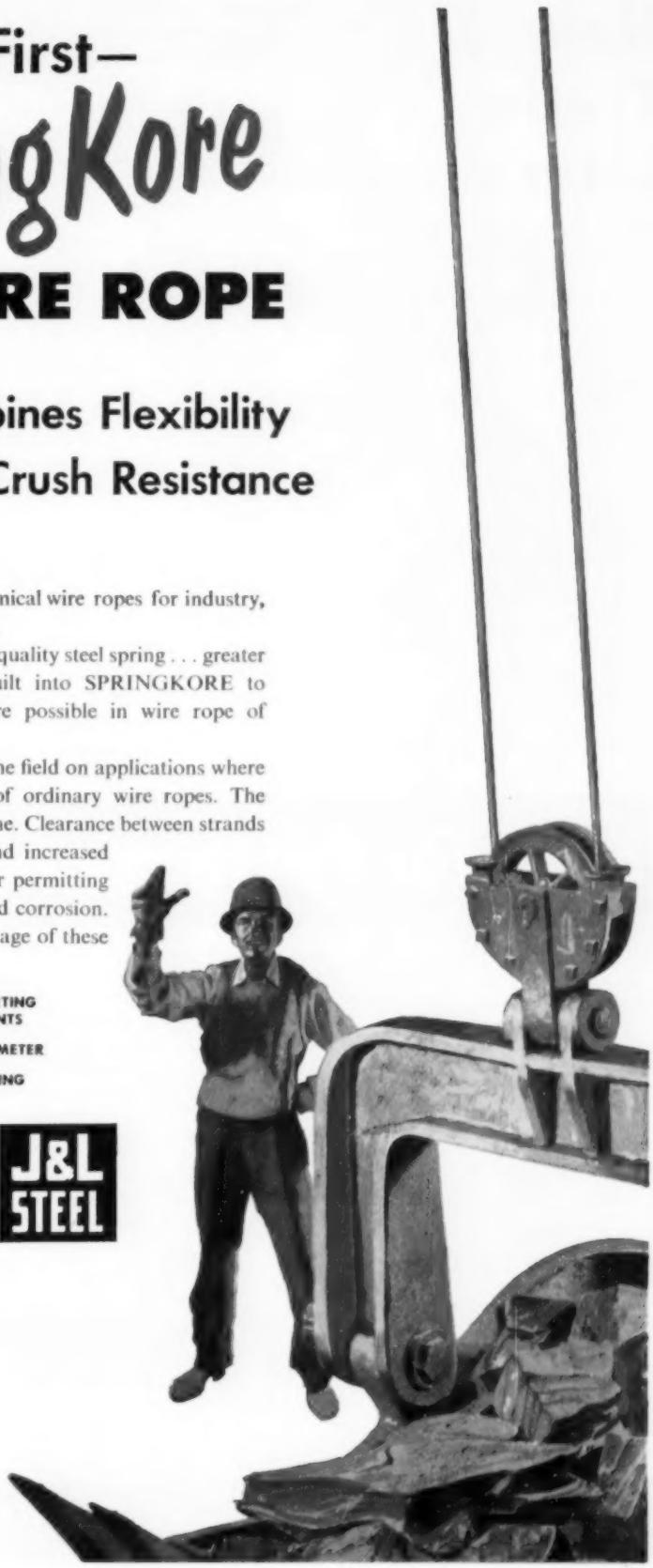
Always working to develop better, more economical wire ropes for industry, J&L has scored another first—SPRINGKORE.

The unique properties of a tightly coiled high quality steel spring . . . greater flexibility and resistance to crushing—are built into SPRINGKORE to provide resiliency and toughness never before possible in wire rope of equivalent strength and cost.

SPRINGKORE has *already* proved itself in the field on applications where heavy crushing action limits the service life of ordinary wire ropes. The diameter stays uniform for a longer period of time. Clearance between strands is maintained resulting in greater flexibility and increased fatigue life. The coiled spring forms a reservoir permitting excellent lubrication to reduce internal wear and corrosion.

Specify new SPRINGKORE and take advantage of these dollar-saving features:

- LONG TERM FLEXIBILITY
- RESISTANCE TO CRUSHING ACTION
- COMPLETE LUBRICATION
- MORE SUPPORTING CONTACT POINTS
- UNIFORM DIAMETER
- BETTER SPOOLING
- LESS INSIDE STRAND WEAR



Jones & Laughlin
STEEL CORPORATION — *Pittsburgh*

J&L STEEL

For further information, write for J&L's new booklet, "New Wire Rope for Industrial Uses."

Jones & Laughlin Steel Corporation
3 Gateway Center, Dept. 429, Pittsburgh 30, Pa.

Please send me a copy of your booklet, "New Wire Rope for Industrial Uses."

Name _____

Company _____

Address _____

_____

New Trade Literature

Subject: **Portable Compressors**

Content: A new Bulletin #125 representing three distinct types of air compressors presents complete details, specifications, and recommendations covering the Pneumapower, the self-propelled Pneumatractor, and the Unistage models. Each unit covers a definite need, and represents simplified compressor design, fewer parts, and fuel savings up to 50%, the manufacturer states.

Where to get: Schramm, Inc., Department ADM, West Chester, Pa.

Subject: **Diesel Maintenance**

Content: A series of three 8½ by 11-in. engineering data sheets for industrial users concerned with Diesel engine maintenance is now available from Wall Colmonoy Corp. These sheets give information pertaining to the application of Colmonoy nickel-base and iron-base hard-facing and spray-welding alloys to Diesel engine valves to provide wear surfaces that resist abrasion, impact, galling, and corrosion. Typical Diesel valve applications are described in detail.

Where to get: Wall Colmonoy Corp., 19345 John R St., Detroit 3, Mich.

Subject: **Wheel-Tractor**

Content: An attractive eight-page booklet, illustrated throughout, tells of the new hydraulically-operated Davis Pit Bull, basic unit wheel-tractor available with 11 easy-to-change attachments for a multitude of different jobs. The Pit Bull fits all Ford or Ferguson tractors according to the manufactureer. Booklet shows machine as rigged with each of 11 attachments.

Where to get: Mid-Western Industries, Inc., 1009 South West St., Wichita, Kan.

Subject: **Diesel Trucks**

Content: Autocar has just released a direct mail folder describing its Diesel trucks. When the book is opened, the gate-fold presents first, a two-page spread showing Autocar customers using the Diesels in many different ways. When the second opening is made, it reveals a four-page-wide black and green presentation of the Diesels around a center two-color illustration of a complete Autocar Diesel chassis. The chassis illustration is surrounded with pictures emphasizing some of the outstanding features of the chassis. Included in these are the tandem rear axle, nut and bolt construction, Autocar-Cummins Diesel engine, the many types of transmissions, and the Autocar Driver-cab.

Where to get: Autocar Division of The White Motor Co., Exton, Pa.

Subject: **Motor Scrapers; Graders**

Content: Two new catalogs describe in detail mechanical and performance features of the Allis-Chalmers Models TS-200 and TS-300 Motor Scrapers, and of Motor Wagon models TR-200 and TW-300. Both catalogs — MS-452 which covers the TS-300 and TW-300 units, and MS-453 covering Models TS-200 and TR-200 — are in two colors. Catalog views of the equipment are included along with photos showing important mechanical features of the models, including those which provide maximum comfort and safety for the operator. In addition to specificatiors and other important data, the catalogs are illustrated with in-the-field photographs showing performance ability, versatility, and efficiency of the motor scrapers and motor wagons.

Where to get: Allis-Chalmers Manufacturing Co., Tractor Division, Milwaukee 1, Wis.

Subject: **Engines**

Content: A new engineering bulletin describing its latest type JS engines has just been released by The Cooper-Bessemer Corp. Bulletin J-73 provides specifications and description on the complete line of 13-in. bore and 16-in. stroke Diesel, Gas-Diesel, and spark-ignited gas engines. Cutaway drawings showing engine detail, as well as performance charts of the atmospheric and super-charged engines, are included.

Where to get: Cooper-Bessemer Corp., Mount Vernon, O.

Subject: **Vibrating Screen**

Content: The new, improved Mesabi vibrating screen, built specifically for severe service applications, is the sub-

Continued on page 61

Built for Performance

Every feature in the Omaha Dragline Bucket spells performance. Wedge shape for easier loading and emptying... perfect balance for smoother carrying and dumping . . . smooth interior, higher arch, continuous lip. Extra strength has been built in at every point of strain, while extra weight has been eliminated. Write now for catalog giving complete information and specifications for the four types available.

OMAHA DRAGLINE BUCKETS

DRAKE-WILLIAMS MOUNT • OMAHA, NEBR.

"Here's Good News for us Blasters..."

We have always claimed that Primacord is not affected by stray currents and cannot be set off by friction, sparks or ordinary shock. But lightning! . . . no one knew what lightning would do . . . until now!

The incident took place on a pipe line job in Kentucky. Primacord branch lines were hooked up to the trunk, but the detonator had not been attached. The crew left the job when the thunderstorm warning came — and when they returned they discovered that lightning had struck the Primacord in two places, but had failed to detonate it. About six feet of trunk line was gone, and the free ends appeared to have been melted off. The branch line Primacord from four holes, previously tied into the trunk, were also burned off to the collars of the holes. Another burned out section of the trunk line, about two feet long, was found twelve feet away.

New lengths of Primacord were tied onto the trunk and branch lines, and the blast was shot when all was ready.

This is good news for blasters — especially during the thunderstorm season, or where high voltage electrical equipment is on the job.

P-16

Ask your explosives supplier or write for further facts to

THE ENSIGN-BICKFORD COMPANY
Simsbury, Connecticut
Also Safety Fuse since 1836

PRIMACORD® *detonating fuse*

PROVED and APPROVED

BUCYRUS-ERIES
make money

In Washington, a 38-B crane, equipped with special log hoeing boom, loads logs to trucks.

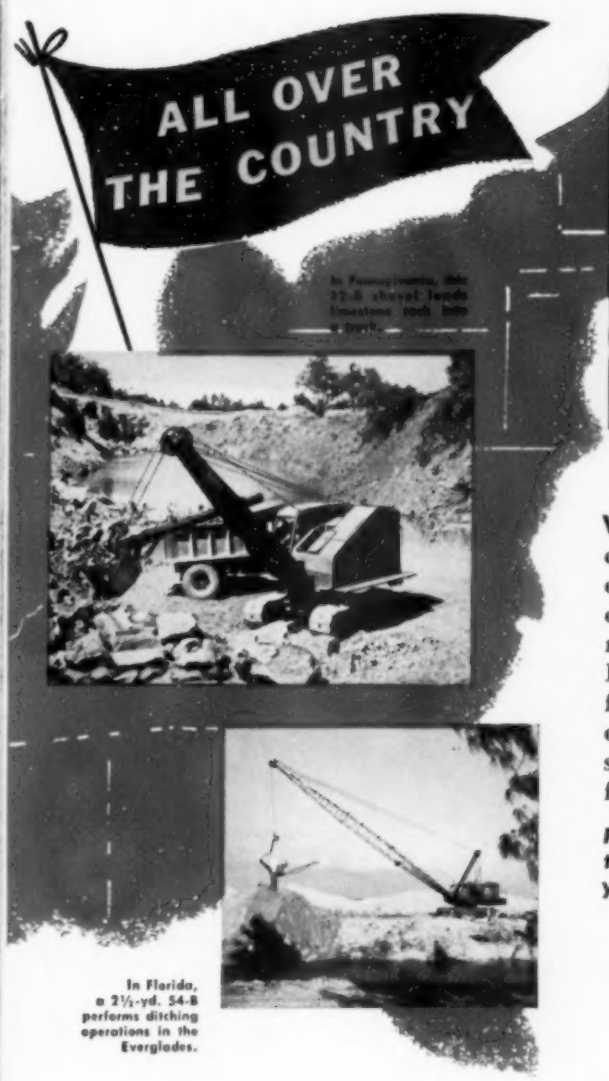
In Colorado, this 2-yd. 51-B shovel makes a cut for a new road to Boulder Canyon.

In California, an 88-B crane, with 135-ft. boom, hoists a concrete bucket during bridge construction.

In Texas, this Vi-yd. 124 clamshell digs a sewer line trench in downtown San Antonio.

In New Mexico, hard malapai rock is cleaned from a pipeline trench by a ¾-yd. 22-B dragshovel equipped with tractor-type crawlers.

for contractors



In Vermont, a road to a new dam site is cut through a hillside by a ¾-yd. 10-B shovel.

Wherever you go, you'll see Bucyrus-Erie excavators and cranes on construction projects of all types . . . making money for their owners. Why? Because contractors everywhere recognize the value of Bucyrus-Erie Individual Design. Each model is designed from the ground up to do the most effective job of handling its rated load. Speed, power, strength and weight are all properly proportioned for efficient, economical operation.

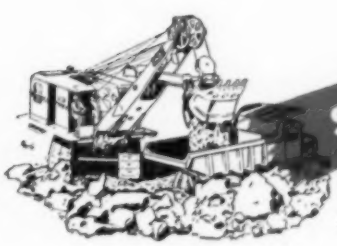
Find out what Individual Design can mean to you on your jobs. Get all the facts from your nearby Bucyrus-Erie distributor.

13E54C

In Florida, a 2½-yd. 54-B performs ditching operations in the Everglades.

BUCYRUS ERIE

SOUTH MILWAUKEE, WISCONSIN



See Your Bucyrus-Erie Distributor

SHOVELS • DRAGSHOVELS • DRAGLINES • CLAMSHELLS • CRANES

5 YEARS OF "VERY RELIABLE PERFORMANCE"

This Northwest 1½-yard shovel has worked steadily since 1949 for Duffy Reed Construction Co., of Twin Falls, Idaho. Speaking of the CAT® D13000 Engine that powers the shovel, W. L. Reed, secretary of the company, says: "In spite of mile-high altitude and dry and dusty conditions, it has given us very reliable performance on various road construction jobs."

The shovel is shown here excavating blasted rock for the relocation and grading of five miles of U. S. 93, 45 miles south of Twin Falls.

Other Caterpillar equipment owned by the firm includes a D318 Engine, powering a Koehring ¾-yard shovel, a D17000 Engine, six D8 Diesel Tractors, a D6 and three No. 12 Motor Graders.

Standardizing on Caterpillar-powered equipment pays off, as many contractors can testify. Operators know and trust these familiar, dependable engines. Parts are interchangeable. Simplified maintenance and prompt service from a single dealer source help keep the units running steadily, with a minimum of down time. And they're built to operate economically on non-premium fuel.

Leading manufacturers of excavating machinery, compressors and other equipment can supply Cat Engines in the products they build. For repowering old machines, see your Caterpillar Dealer. He has the right power for your job—12 engine sizes up to 500 HP. Call him today.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

SPECIFY CAT POWER FOR HIGH-PROFIT PERFORMANCE

New Literature . . .

Continued from page 56

ject of a 16-page bulletin. Screen capacity, size selection, and installation are fully covered, and the bulletin is well illustrated with numerous cut-a-ways to show mechanical details and features of design. The installation drawings, data and specifications, accompanied by text material and tables enable proper selection of the correct screen for the job. Structurally, the new screen includes 18-in. car channel reinforced with 8-in. wide-flange cross beams on 4-ft. widths, 18-in. I-beams reinforced with 8-in. wide-flange cross beams on 5 and 6-ft. widths. Pan sides are ⅜-in. thick on 4-ft. widths, ½ in. thick on 5 and 6-ft. widths. Heavier inner bearings assure greater freedom from maintenance. Request Bulletin No. 651.

Where to get: Pioneer Engineering Works, Inc., 1515 Central Ave., Minneapolis 13, Minn.

Subject: **Hoist Classification**

Content: The Hydraulic Hoist and Steel Dump Body Manufacturers Association has announced the publication of a *Hoist Classification Chart* compiled by its engineering committee. This is the first chart of its type in the industry, according to the Association. It has been published to provide a means of standardizing the capacity ratings and as a convenient method for comparison of hoists manufactured by the Association members. The chart places all hoists in classes depending on the torque rating in inch-pounds developed by the hoist around its hinge shaft. Also included in the chart is a table for determining the size or rating of hoist needed for any anticipated use. Body dimensions and payload tonnage figures are used in the table which converts that information into the required hoist class needed for the given job. The engineering committee has also compiled a Glossary of Terms used by the industry.

Where to get: J. R. Pat Gorman, Executive Secretary, Hydraulic Hoist and Steel Dump Body Manufacturers Association, 1740 "K" Street, N.W., Washington 6, D. C.

Subject: **Product Line**

Contents: A new compact catalog covers the complete line of Gardner-Denver pumps, compressors, rock drills, and pneumatic equipment widely used throughout construction, mining, petroleum, and general industry. This was accomplished by condensing the basic information and specifications for each product, or group of closely related products, into a single-sheet, two-page bulletin. These single-sheet bulletins are then bound with a plastic binding that allows the book to open flat at any page. Indexed dividers split the book into 11 product sections for greater convenience. Additional bulletins containing full descriptive information are also available on most products, for the benefit of those who require more specific details than are found in the general catalog. Request Bulletin GP-100.

Where to get: Gardner-Denver Co., Quincy, Ill.

Subject: **Truck Cranes**

Content: A complete booklet, entirely new from cover to cover, reports fully on P&H truck cranes. Devoted to the P&H Models 255-A, 355-A and 555-A, the two-color bulletin gives a broad picture story on these well-known machines. Within its 28 pages, in addition to dozens of large-size on-the-job pictures, are complete descriptions and specifications of important features such as carriers, power plants, P&H torsion bar front axles, and convertibility. A very interesting feature of the book is the "motion picture" story on the take-down of P&H's boom for road travel. Request Bulletin TX-143.

Where to get: Harnischfeger Corp., Small Excavator Div., 4602 W. National Ave., Milwaukee 46, Wis.

Subject: **Tractor**

Content: Recently made available by Caterpillar are three new pieces of literature. (1) Broadside features new 150 hp Cat DW15 tractor, and is complete with photographs and cutaways of the engine, transmission, and clutch. Detailed specification sheet is included. Request form 31041. (2) Form 31016 is a two-color booklet which tells how comfort, utility, and safety can be added to motor graders, wheel and track-type tractors through the use of Cat attachments. (3) *The Story of Mid City—and its Sanitary Landfill*, a 16-page cartoon-style booklet, simply explains the landfill method of garbage disposal. Request form D424.

Where to get: Caterpillar Tractor Co., Peoria, Ill.

Subject: **Wire Rope**

Content: A new publication entitled *Wire Rope Recommendations and Catalog* is designed to provide a simplified ordering plan and reference for wire rope users. The catalog is divided into 16 sections, one for each of the major industries which use wire rope. Each section, clearly marked by index tabs for quick reference, gives detailed information on wire rope for specific requirements. The new Roebling plan for ordering uses code numbers, as indicated in the catalog, for the different sizes and types of wire rope. Orders are made simply by giving the code number and length of rope required. Purchasers may also mention end-use for the rope to insure proper lubrication for given applications. Replacement or additional orders can be made in the same way, and subsequent ropes will be identical to the original through this system of complete description and positive coding. The plan has already been implemented by Roebling distributors throughout the country.

Where to get: John A. Roebling's Sons Corp., 640 S. Broad St., Trenton, N. J.

Movies . . .

Subject: **Sewers**

Content: *New Sewers for Old* is a 15-minute 16 mm. sound-color movie which tells how a small industrial community of 35,000 population solved its problem of old and inadequate sewers by a bond issue and sewer rental plan. Installation of asbestos-bonded, paved invert corrugated metal pipe is shown in detail, including digging 108-in. diameter tunnels under railroad tracks and installing steel liner plates for 96-in. diameter asbestos-bonded sewer pipe. It concludes with scenes of an unusual sewer outfall job. A special trench shield, metal saddle branches and house connections as well as other features are illustrated in the picture. The film is offered for showing to engineering and construction groups with no charge except return postage.

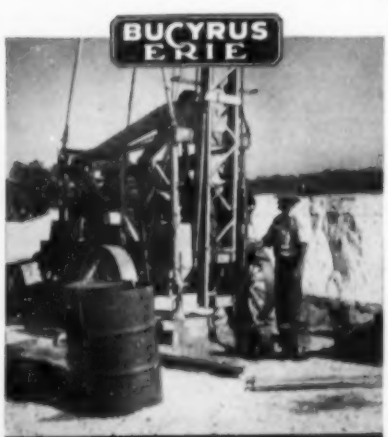
Where to get: Motion Picture Department, Armco Drainage & Metal Products, Inc., Middletown, O.

Earn Extra Income . . . Avoid "Time on Your Hands"

Drilling contractors with only part-time blast hole work can convert non-productive down-time into a source of daily profits with double-duty Bucyrus-Erie 20-W or 22-W churn drills.

These hard-hitting rigs with their simple direct-drive drilling motion drill 4- to 6-in. blast holes quickly and at low per-foot costs. If there's a lull in blast hole work, they can handle profitable water well drilling jobs on the side because they have ample spooling capacity to drill the deeper holes which water well work requires.

Let a versatile, durable Bucyrus-Erie churn drill open up a two-way road to added profits for you. Write for complete information and descriptive literature today! 18W54



BUCYRUS-ERIE COMPANY
South Milwaukee, Wisconsin

Notes from the Manufacturers

American Brake Shoe Co., New York, N. Y., has opened a new sales and technical service office in Duluth, Minn., to serve the various mining companies in that area. John V. Houston, Jr. of Brake Shoe's headquarters division in New York, has been assigned to head the new office. Formerly a castings salesman with the company's Brake Shoe & Casting Division, Houston will concentrate on promoting products and materials of American Brake Shoe Co. used by the various mining companies. He is a metallurgical and chemical engineering graduate of Purdue University ('43). Houston will currently be located at the office of Brake Shoe's Ramapo Ajax Division in Superior, Wis., effective June 1, 1954, until the new office in Duluth is opened.

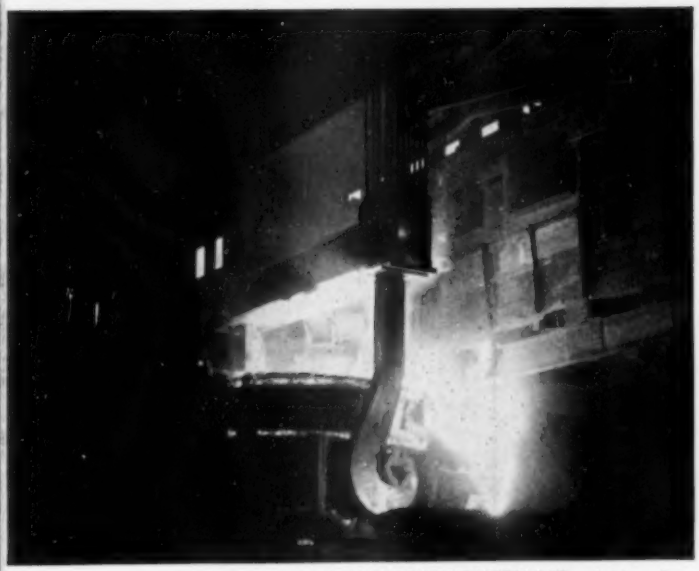
Bucyrus-Erie Co., South Milwaukee, Wis., has reported Louisiana Machinery Co., Inc., Monroe, now offers sales and service for Bucyrus-Erie excavators and cranes in northern Louisiana. Serving the territory north of and including the parishes of Vernon, Rapids, Avoyelles, and Concordia, the new distributor will offer the full line of Bucyrus-Erie general purpose excavators and cranes (⅜- to 4-yd. gasoline, Diesel, single-motor electric); the all hydraulic truck-mounted Hydrocrane and Hydrohoe and Red Arch dragline buckets. Headquarters for Louisiana Machinery is at Ninth and Louisville Sts., Monroe. Its modern equipment and servicing facilities make available a complete program of sales, parts replacement and repair service. Branch offices are located on New Minden Road in Shreveport, and on McArthur at Masonic Drive in Alexandria.

Caterpillar Tractor Co., Peoria, Ill., has announced the opening of its new plant at York, Pa. The dual-purpose facility at York manufactures certain replacement parts for the Company's line of track-type tractors and also serves as a regional storage and shipping center for the Company's entire parts line. York was selected as a plant site primarily because of its easy accessibility to ports on the eastern seaboard from which parts are shipped to the Company's export customers, and because the location permits faster service to Caterpillar parts customers in the eastern quarter of the United States. York is also located on the main line of the Pennsylvania railroad which provides a convenient route from the Company's largest manufacturing facility, located at Peoria, Ill.

Clark Equipment Co., Benton Harbor, Mich., has appointed six new dealers to sell and service the "Michigan" line of power shovels and tractor shovels, products of its Construction Machinery Division. The dealers and their territories are: George G. Anderson & Co., Inc., 14900 Myrtle Ave., Harvey, Ill., for the Chicago and northern Illinois area; Cunningham-Ortmayer Co., 2016 W. Cornell St., Milwaukee, Wis., for the entire state of Wisconsin; Western Machinery Co., 2400 W. 7th Ave., Denver, Colo., for the entire state of Colorado; and Western Machinery Co., 124 E. Buchanan St., Phoenix, Ariz., for the entire state of Arizona; Western Tractor and Equipment Co., 2230 First Avenue South, Seattle, Wash., for Alaska; all of Washington except the counties of Wahkiakum, Cowlitz, Clark, Skamania and Klickitat; in Idaho the counties of Bonner,

Continued on page 64

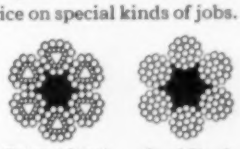
"Mind if I watch over your shoulder?"



PROVING EXTRAORDINARY SERVICE—A Hercules Flattened Strand crane rope delivered 18 months service, compared to 6 months for ordinary rope. It performed equally well as a clamshell bucket rope. On a hot ladle crane it outlasted round strand rope by 4 to 1, and still tested at higher-than-rated strength. It was chosen for its super strength to haul the car on the continent's largest cableway at Kitimat.

Can Flattened Strand solve your special wire rope problem?

Hercules Flattened Strand is a special kind of wire rope that provides extraordinary service on special kinds of jobs.



Flattened Strand Round Strand

The key to the difference is the triangular shape of the strands. Notice how the strands support each other; how the rope circumference is almost perfectly round; and how the core is smaller. There is 10% more steel in Hercules Flattened Strand than in round strand ropes of the same diameter. That means *10% more strength* and *10% greater safety.* Flattened Strand wears longer and more evenly . . . and is easier on sheaves and equipment.

If you can use this Super-rope, you'll soon begin saving time, labor, money. Why not investigate?

Because Leschen pioneered and perfected Hercules Flattened Strand wire rope, Leschen is your best source of additional information. Ask your Leschen man, or write for "The Flattened Strand Story."

LESCHEN WIRE ROPE DIVISION
The Watson-Stillman Company
(A SUBSIDIARY OF H. K. PORTER COMPANY, INC.)
St. Louis 12, Missouri

LESCHEN
HERCULES Red-Strand
WIRE ROPE

Notes . . .

Continued from page 62

Kootenai, Benewah, Latah, Nez Perce, Boundary, Lewis, Shoshone and Clearwater, and that part of Idaho county north of the Salmon River; and in Montana the counties of Lincoln, Sanders, and Mineral; Foulger Equipment Co., 1361 S. 2nd West St., Salt Lake City, Ut., for the entire state of Utah; in Idaho the counties east of the western boundaries of Clark, Butte, Blaine, Camas, Gooding, and Twin Falls; and in Wyoming all counties west of the eastern boundaries of Big Horn, Washakie, Fremont, and Sweetwater.

Construction Machinery Co., Waterloo, Ia., recently announced the appointment of Edward R. Daley as its west coast representative to work with CMC distributors in the seven western states. After attending Northwestern University, Daley went with Marion Power Shovel Co. Daley left Marion to become assistant regional manager for Cummins Engine Co., Inc. Daley was also with Shaw Sales and Service Co. of Los Angeles, Calif., and Edw. R. Bacon Co. of San Francisco. Daley's headquarters will be in Burlingame, Calif.

Cooper-Bessemer Corp., Mount Vernon, O., has announced two recent promotions. Robert F. Lay has been appointed assistant general sales manager for the firm. Lay previously held the position of chief engineer of Cooper-Bessemer's Product Division, a position which he had held since the 1st of January. Starting as a co-op student at the University of Cincinnati, Lay became associated with Cooper-Bessemer in 1924. He joined the Baldwin Locomotive Co. in 1934, where he later became assistant sales manager. In 1940 Lay went to The Elliott Co., Jeanette, Pa., to become sales engineer and subsequently chief engineer and production manager of the supercharging division. Upon return to Cooper-Bessemer in 1946, Lay worked as head of the stationary engine section until his promotion to chief engineer. Also promoted was Eugene L. Miller to assistant general manager. Miller was previously supervisor of application engineering. A graduate of Mechanical Engineering from Oklahoma A & M in 1941, Miller spent the next four years in the armed services as Battalion Commander with the rank of Lt. Colonel. Upon leaving the armed services he joined Cooper-Bessemer.

Dart Truck Co., Kansas City, Mo., a 50 year old truck manufacturer specializing in the construction of heavy-duty, off-highway trucks has named a large number of new dealers since the 1st of January. Prior to that time, the company's business had been through specialized mining equipment dealers located in the mining area. They are: Myers Motors — Duluth, Minn. Goar Service & Supply — Bisbee, Ariz., Prescott Tractor Sales — Prescott, Ariz., Arnold Machinery Co. — Salt Lake City, Ut. The new domestic dealers whose sales are largely in construction equipment are as follows: Funkhouser Equipment—Kansas City, Mo., Tractor & Equipment Co.—Oak Lawn, Ill., W. Va. Tractor & Equipment Co.—Charleston, W. Va., Service Supply Corp.—Philadelphia, Pa., Clifden Rocktool Co. — Rockaway, N. J., R. W. Thompson Co. — Hartford, Conn.,

Sauerman
CRESCENT SCRAPERS

dig, haul and place more yardage
faster . . . at lower cost!

Reduce difficult dig-haul-piling jobs to a simple, single operation with a Sauerman Crescent Scraper. Sizes range from 1/3 to 15 cu. yds. to cover the needs of material handling jobs . . . large or small.

The Crescent, with rugged toothed-blade, penetrates the toughest material with plowshare ease. The unique bottomless scraper gathers a full load on the forward pull and hauls at ground level to the discharge point for an instantaneous, clean dump. A single operator situated in a safe location overlooking the work area, automatically controls all the digging, hauling and dumping operations.

Sauerman Scrapers are low in first cost, simple and economical to maintain. Engineered to combine sturdy construction and wear-resistant lightweight metals, the Sauerman Crescent Scraper gives you small power consumption—diesel, gasoline or electric—compared to tonnages handled. Scrapers installed more than twenty-five years ago are still giving dependable service with a minimum of maintenance.

Write today for Catalog J for full information about the Crescent Scraper. Sauerman Bros., Inc., 574 S. Clinton St., Chicago 7, Ill.

ONE-MAN MATERIALS HANDLING

SAUERMAN BROS., INC.

Balzer Machinery Co. — Portland, Ore., C. H. Grant Co. — Oakland, Calif., Cleveland Contractors Equip. Co. — Cleveland, O., Martin-Lumby Co. — Dallas, Tex., Smith-Booth Usher Co.—Los Angeles, Calif., Vancouver Machinery Co.—Vancouver, B. C., Bowlake Equip. Co.—Seattle, Wash., Carroll & Edwards Equip. Co. —Cincinnati, O., McCarthy, Jones & Woodard—Nashville, Tenn. The export dealers recently named are: B. K. Khanna Co.—New Delhi, India, Universal Mechanization Co., Ltd.—Johannesburg, South Africa, U. S. Automotive Co., Inc.—Manila, Philippines.

Detroit Diesel Engine Division, General Motors Corp., Detroit, Mich., has appointed Pecaut Equipment Co. of Sioux Falls, S. D., as distributor for the sale and servicing of its engines for the entire state of South Dakota. Headed by S. F. Pecaut, the company has operated in the state since 1936 and in addition to Detroit Diesel presently represents the Euclid Road Machinery Co., Northwest, Ingersoll-Rand, Gorman-Rupp, Construction Machinery, and other construction equipment manufacturers. Darrel Pecaut will head the Diesel activity as sales manager with William Taylor as service manager and Robert Schuknecht as parts manager.

Eutectic Welding Alloys Corp., Flushing, N. Y., has announced that premises have been acquired by Eutectic Welding Alloys Co. of Canada, Ltd., at 3150—37 Street, Ville St. Michel, Montreal, P.Q., for the manufacture of its special purpose alloys in Canada. Production will begin almost immediately and goods will be shipped direct from the plant. The modern brick building has an area of 10,000 sq. ft. which provides ample space for the installation of the necessary machinery. It will operate on a production line basis, similar to that of the plant in Flushing. Raw materials will enter the building at one end and, after processing and fabricating, the finished products will leave at the other end through the packaging and shipping departments. The corporation manufaetures a complete range of welding and brazing alloys, solders, and chemical aids. It is a pioneer of "non-fusion" welding

Continued on page 66

Cut your handling time with

WELLMAN-WILLIAMS

REHANDLING BUCKETS

WELLMAN-WILLIAMS Material Handling Buckets open and close faster. Their *smooth scoops* discharge the material quickly. *Double hinge shaft* construction enables them to cover larger areas for bigger loads. *Extra wide scoops* cut time on cleanup operations.

WELLMAN-WILLIAMS BUCKETS — built to dig and last while digging.

THE WELLMAN ENGINEERING CO.

CLEVELAND 4, OHIO

Mail coupon for free bulletin

The Wellman Engineering Company
7038 Central Avenue, Cleveland 4, Ohio

Please send me a free copy of bulletin on:

☐ Clamshell Buckets ☐ Stone Grabs
☐ Dragline Buckets ☐ Log Grabs

Your Name_____

Address_____

City_____ State_____

Position_____ Company_____

Notes . . .

Continued from page 65

and has over 78,000 users in the U. S. and Canada serviced by 350 district engineers and service personnel and has outlets in 100 countries throughout the world.

Four Wheel Drive Auto Co., Clintonville, Wis., has announced the signing of a contract with the Hall Machine & Iron Works of Sedro Woolley, Wash., giving it exclusive sales rights for all products manufactured by the Washington firm. The Hall Machine & Iron Works are manufacturers of a heavy duty brush cutter, brush hog, and a tailgate spreader.

Galion Allsteel Body Co., Galion, O., has appointed R. H. Tomlinson as eastern division sales manager. Tomlinson will direct sales and service of Galion Allsteel dump bodies, hydraulic hoists, and LOAD-evator hydraulic tailgates in all states east of the Mississippi. His headquarters will be at the Galion plant in Galion. For the past year, Tomlinson has been Galion's regional representative in Kentucky, Alabama, Mississippi, Louisiana, and Arkansas.

Gar Wood Industries, Inc., Wayne, Mich., has appointed Equipment, Inc., Jackson, Miss., as a dealer for Buckeye ditchers, speaders, and finegraders of its Findlay Division. Ten models of Buckeye ditchers for all types of pipe and service line ditching will be handled. Two models of finegraders for pavement widths from 10 feet to 24 feet and spreaders in lengths of 9 feet, 10 feet, and 12 feet complete the line. Territory covered by Equipment, Inc., includes 36 counties in central Mississippi, as well as 14 counties in southern Mississippi on a non-exclusive basis.

H. K. Porter Co. Inc., Pittsburgh, Pa., recently announced acquisition of Pioneer Rubber Mills Inc., of Pittsburg, Calif., manufacturer of industrial rubber products on the Pacific Coast. The new acquisition will become part of the Quaker Rubber Corporation, one of H. K. Porter Company's nine divisions. The Pioneer plant becomes the 15th factory in the Porter group. Pioneer manufactures rubber belting, hose, packing, and many other industrial rubber products similar to those manufactured by Quaker on the Atlantic Coast. Quaker's main offices and plant are located in Philadelphia, Pa. The combination will make possible better service to customers of both Pioneer and Quaker, according to the Porter announcement. Pioneer Rubber Mills will retain its identity. Sumner M. Suhr, sales manager, who has been with Pioneer since 1917, has been appointed manager of the new division under George A. Dauphinais, vice president and general manager of Quaker Rubber Corporation.

Hammermills, Inc., subsidiary of Pettibone Mulliken Corp., Chicago, Ill., has announced the transfer of sales, engineering, and manufacturing of the complete line of Bulldog hammermills to 625 C Avenue, N.W., Cedar Rapids, Ia., where these operations will be carried on with Universal Engineering Corp. This move concentrates all crushing and pulverizing equipment activities of Pettibone Mulliken Corp. subsidiaries and makes available to industry a most complete technical know-how from one source. The Bulldog non-clog moving breaker plate hammermill will be offered to the construction industry through Universal distributors. Sale of the complete line of hammermills, which include stationary breaker plate, center feed, impact louver plate, and feed grinding types of cement, chemical and processing industries, will be handled by Hammermills, Inc. Charles M. Bindner and Ted A. Oberhellmann will continue as president and vice president of Hammermills, Inc.

Harnischfeger Corp., Milwaukee, Wis., has announced several changes of district offices. Arch James of P&H Electric Hoist and Cranes, is now in charge of the St. Louis office. In addition, James will also serve the Kansas City territory on both products, working actively with C. Powell, district manager of that office. Powell will supervise P&H excavator sales in a newly combined Kansas City-St. Louis territory. John T. Vaughan has joined Harnischfeger Corporation and will assist Powell in excavator sales in this new territory. The Milwaukee company has named Frank J. Hirner district manager of excavator sales for the Chicago-Milwaukee offices. Hirner will have headquarters in Chicago, Ill., and direct sales for both large and small P&H excavators, ranging in capacities from ⅛ cubic yard to 10 cubic yards. Both P&H crawler-mounted power shovels and cranes and truck-mounted machines are included. Hirner joined Harnischfeger Corp. in 1935 and has held many important positions leading up to his present appointment, including manager of P&H St. Louis and Philadelphia territories.

Heil Co., Milwaukee, Wis., has announced that Hoffman Auto Body Service, Inc., 1480 N. Grant St., Columbus, O., is now handling the distribution of the complete line of Heil truck bodies and hoists, including Colecto-Pak garbage units and

If you have ever seen a Hayward at work you'll realize why nothing can outperform it in handling bigger, heavier pay-loads.

A Hayward has extreme simplicity in design and construction, no contact between closing mechanism and load, minimum movement of rope. That means less rope wear, less upkeep. The Hayward Company, 50 Church St., New York 7, N. Y.

HAYWARD BUCKETS

GLAM SHELL • ELECTRIC • ORANGE PEEL • GRAPPLES

famous for performance since 1888

"Next time you throw dynamite, don't tie it to a stick shaped like a boomerang!"

the Heiloader hydraulic tailgate. Territory of the new Heil distributor is the state of Ohio south of and including the counties of Mercer, Auglaize, Hardin, Marion, Morrow, Knox, Coshocton, Guernsey, and Belmont; and north of and including the counties of Preble, Montgomery, Greene, Madison, Pickaway, Hocking, Vinton, Jackson, Athens, and Washington.

Hensley Equipment Co., Oakland, Calif., has appointed Hudson Equipment Co. of San Diego, Calif. and the Pioneer Equipment Co. of Reno, Nev., as distributors for the complete Hensley line. Hensley Equipment manufactures heavy duty dozer rippers and brush rakes, scraper rippers, dozer and bits, cutting edges, track rollers and allied tractor attachments for use in heavy construction and large scale farm operations.

International Harvester Co., Industrial Power Division, Chicago, Ill., recently announced that F. V. Van Allen has been appointed a territory sales manager for the states of North and South Dakota and Nebraska. Van Allen will supervise the International Industrial Power sales activities of the Cornhusker Tractor & Equipment Co., North Platte, Nebr., Empire Equipment Co., of Sioux Falls, Rapid City, and Aberdeen, S. Dak., Nebraska Tractor & Equipment Co., of Omaha, Nebr., and Northwestern Equipment Co., of Fargo and Minot, N. Dak. Formerly a sales development consultant for the Industrial Power Division, Van Allen was located in the divisional headquarters at Melrose Park, Ill. He now will make his headquarters at Sioux Falls.

Osgood-General, Marion, O., has appointed Kenneth O. Williamson as sales manager for the company's line of excavators and materials handling equipment. Williamson, formerly assistant sales manager, succeeds James S. Fortiner, who has resigned. Williamson became associated with the company during 1941, in the production department. After serving overseas in World War II, he joined the sales force. Before his appointment as assistant sales manager in 1950, he had served as division sales manager in several territories.

Sherman Products, Inc., Royal Oak, Mich., has announced that William A. Romain has been elected its president by the Board of Directors to fill the vacancy caused by the recent death of George B. Sherman, founder of the firm. At the same time, W. F. Beckman was named vice president and Vincent J. Crampton, secretary-treasurer. Mrs. Janet M. Sherman was elected to the Board to fill the vacancy left by the death of her husband. Romain has been secretary-treasurer and director of the company since its incorporation in 1946, and holds the same titles in Sherman Products of Iowa, Inc. Beckman was affiliated with the sales division of Kaiser-Frazer and Frazer Farm Equipment from 1945 to 1949, when he joined Sherman's sales department, becoming director of sales in 1951. He will continue in that post along with his new duties. Crampton has been with the company since its founding, and was comptroller prior to his appointment as secretary-treasurer to succeed Romain.

Standard Steel Corp., Los Angeles, Calif., has announced that Arm-

Continued on page 72

"DIG IN"

to your competition

with the... UNIVERSAL TRENCHER

MODEL "3A-48" Mounted on Oliver Model "OC-3" Crawler Tractor

If you are feeling the pinch of competition in trenching contracts investigate UNIVERSAL TRENCHER.

If your trenching needs require a trencher digging four feet or less with width of 14", 16" or 18" here is a piece of equipment you'll want to consider.

UNIVERSAL TRENCHER is heavy-duty. It is assembled on Aircraft Precision jigs, yet costs less than comparable equipment.

IT IS DEPENDABLE; You'll have less downtime

IT IS ECONOMICAL; More trenching feet per hour

IT IS MANEUVERABLE; Gets you into tighter places and will cross trench

Universal Trencher is sold through the Oliver Dealer in your locality. See him or write us direct for prices or other information.

Send for our FREE FOLDER for your file. It outlines the many outstanding FEATURES and SPECIFICATIONS of the UNIVERSAL TRENCHER.

HELLER ENGINEERING & MFG. CO. Trencher Division

11754 So. Alameda St., Lynwood, Calif.

NOT in the Contract

He: "Do you object to petting?"
She: "That's one thing I've never done yet."
He: "Petted?"
She: "No, objected."

"How'd you get that black eye?"
"From a cough."
"From a cough?"
"Yeah, I coughed in a clothes closet."

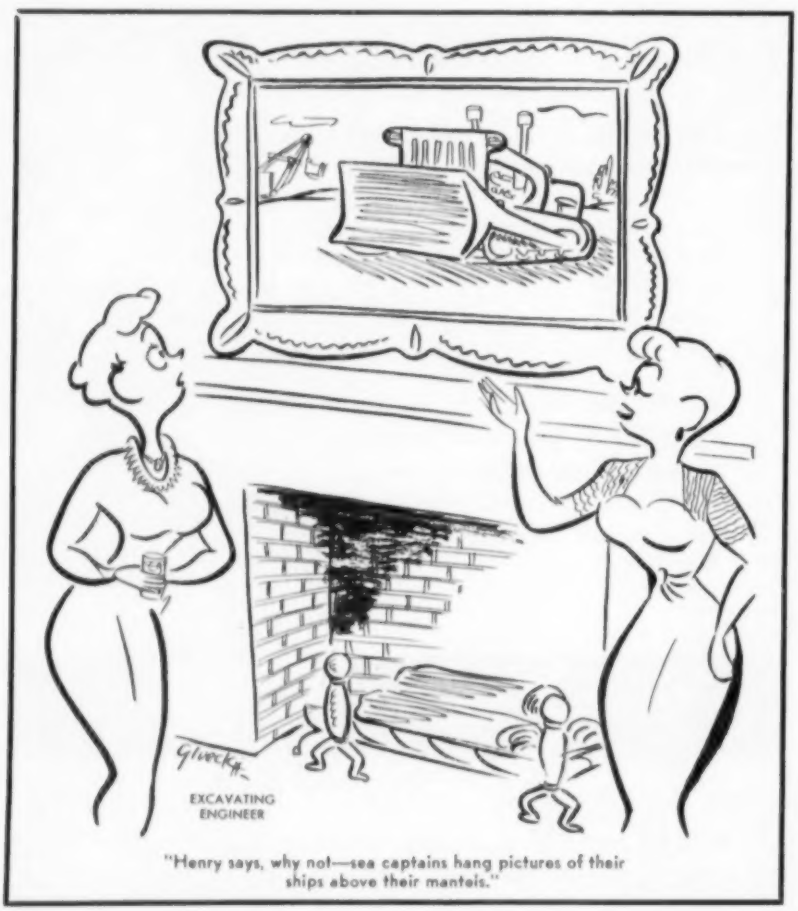
He: "Did you know that tunnel we just came through is two miles long and cost $12,000,000?"
She: (fixing her hair): "Well, it was worth it."

A horse trainer revealed that just before a big race he gives his nag a big slug of whiskey.
"Does that help him win?" asked a friend.
"Nope," replied the trainer, "but he's always the happiest horse in the race."

First Girl: "The forewoman claims to be thirty-eight, but I think she's older, don't you?"
Second Girl: "Say, if the right number of candles were lit on that dame's birthday cake, the heat would set off the automatic fire sprinkler!"

A grizzled old quarry worker went to obtain, for the first time in his life, the services of a dentist.
"How did it go?" his sidekick inquired, when he returned to the quarry.
"He turned the air drill on me," the late patient disgustedly reported, "but I escaped before he could tamp the dynamite!"

Have you heard about the bed bug that was going to have a baby in the spring?



"Henry says, why not—sea captains hang pictures of their ships above their mantels."

A Florida preacher has discovered that it takes more to impress people than it once did. He preached long and eloquently one morning about Jonah and the whale, but after the sermon he overheard a conversation that opened his eyes.
"Ah don' see what's so wonderful about Jonah spendin' three days in the stummick of a whale. Mah first husban' spend longer than dat in the stummick of an alligator," said one of his members to a visitor.
"Sur 'nough?" asked the incredulous stranger. "How long was he inside the 'gator?"
The lady parishioner did some hasty calculation and answered, "It'll be four years come December."

Old-time mosquito to young mosquito: "And to think that when I was your age, I could bite girls only on the face and hands."

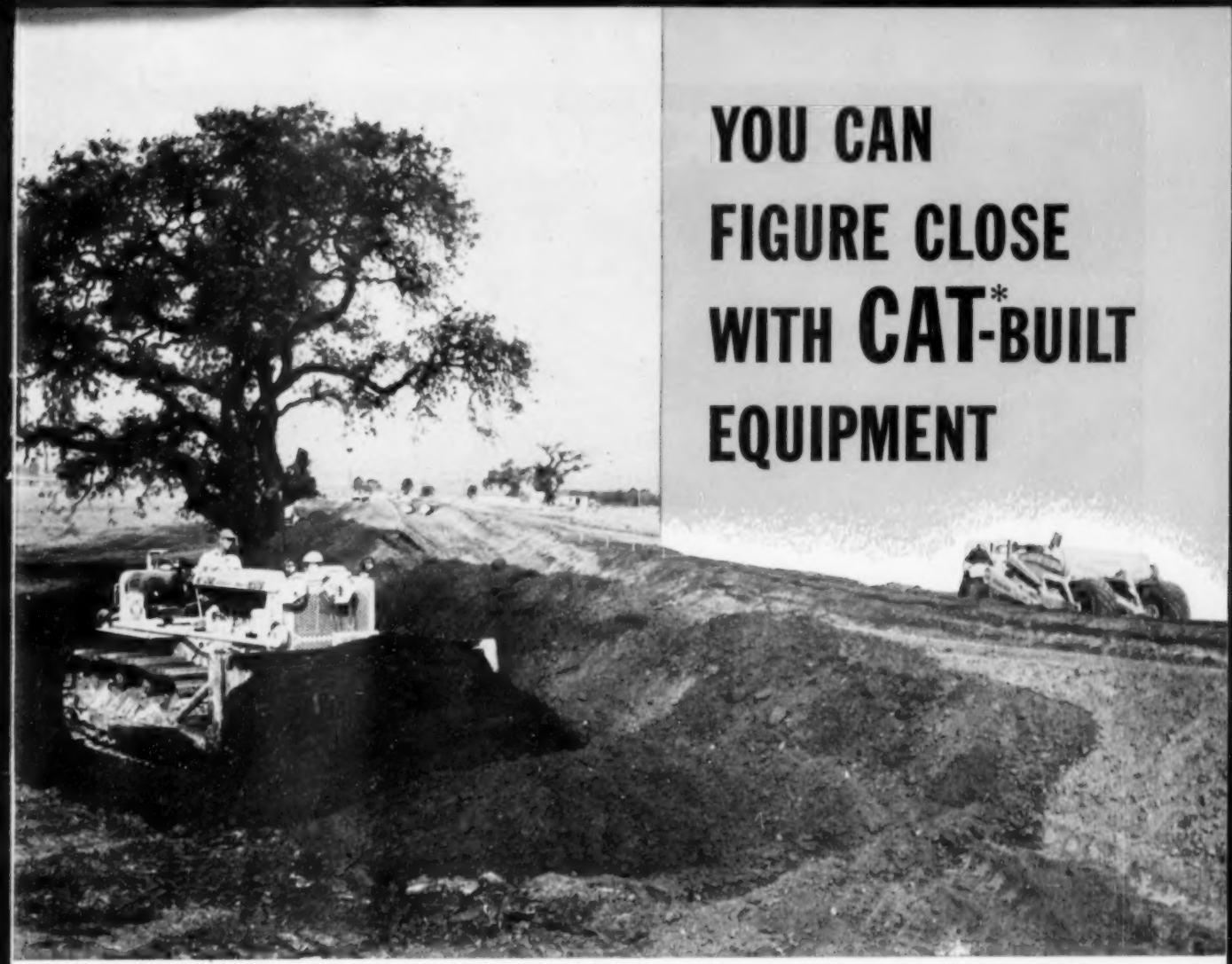
The butcher was chatting with a customer when a woman rushed in and stopped the conversation.
"Give me twenty cents worth of cat meat at once," she ordered. Turning to the other customer, she said: "I hope you don't mind my being served before you."
The first customer looked at her coldly and said: "Not if you're as hungry as that."

Lawyer: "Now, make it brief and to the point—How did the explosion occur?"
Witness: "The engineer was full and the boiler was empty."

Wise guys who ask a pretty waitress for her telephone number never get turned down. She whispers a certain number enticingly. When they dial it, a voice answers pleasantly: "Pest Control Service!"

"What you mumblin' about Paw?" the hillbilly's missus asked.
"Why tarnation," the old man exploded. "It says here them dad-blamed scientists have fooled around till they've discovered something that'll cure snake bite besides likker."

Ad in Lost and Found columns: "Tan leather wallet . . . contained pictures, personal papers and $350 currency. Finder may keep the pictures, the personal papers and the wallet, but I have a sentimental attachment to the money."



YOU CAN FIGURE CLOSE WITH CAT*-BUILT EQUIPMENT

WHETHER you're bidding on a large or small contract, you can figure close with big yellow equipment—and this Cat D8 Tractor with No. 8S Bulldozer is a mighty good example why. Here you see it working on an $80,000 contract for a flood-control ditch near Milpitas, Calif. Other Caterpillar units on the job for McGuire & Hester, Oakland, include a D6 with No. 6S Bulldozer pulling a sheepsfoot tamper and two DW10 wheel-type Tractors with No. 15 Scrapers.

Statistics of the job: length—14,000 ft.; bottom—10 ft. to 22 ft.; slope—1½ to 1 with 8-ft. crown; average depth—6½ ft.; total excavation—60,000 cu. yd. of adobe and some free dirt. General Superintendent Charles A. Aldrich reports: "We've been using Caterpillar-built equipment for 15 years and are well satisfied with its operation and the service facilities and parts procurement of our dealer."

Like all machines built by Caterpillar, the D8 Tractor with No. 8S Bulldozer is built to do *more* work at *lower* cost with *less* down time than any competitive unit. For example: the blade's capacity is *matched* with the D8's horsepower, weight and traction for *big* production. Scientifically designed to *roll* the dirt before it, it also has *maximum* strength at points of stress. Tilt or tip adjustment is easy. And from the D8's seat, visibility is excellent—and low-effort steering gives the operator the positive control of each track he needs for fast maneuvering.

Another asset on *any* contract—fast parts procurement and on-the-spot service from your nearby Caterpillar Dealer. He's a reliable source of information, too. Ask him about the new, more powerful, heavier D8—a 38,155-lb. husky with 150 drawbar HP, exclusive oil clutch, "self-energizing" steering clutches and other big-production features. He'll be glad to demonstrate the boss of the crawlers on your job!

Caterpillar Tractor Co., Peoria, Ill., U.S.A.

CATERPILLAR*

*Both Cat and Caterpillar are registered trademarks—®

NAME THE DATE... YOUR DEALER WILL DEMONSTRATE

FOR THAT EXTRA MARGIN IN SHOVEL PERFORMANCE...

BUCYRUS ERIE

WARD LEONARD ELECTRIC EXCAVATORS

MORE OUTPUT even under the toughest conditions . . . more loads per shift in any quarry or mine . . . extra loads for that EXTRA MARGIN in performance . . . that's what you get from this exclusive combination of shovel front-end features:

1. **TWO-SECTION BOOM** provides maximum strength with minimum weight. The lower section is rigidly connected to the A-frame . . . takes the heavy stresses of the digging cycle in stride because it is part of the main machine.

2. **TUBULAR DIPPER HANDLE** is much lighter than equivalent two-member handle, yet equally strong. Its ability to rotate in the rubber-cushioned saddle block eliminates torsion during the digging stroke, minimizes shock loads.

3. **TWIN DUAL HOIST ROPES** assure a steady, positive digging action with automatic shift of hoist power to that part of the dipper lip where it is needed.

4. **INDEPENDENT ROPE CROWD** is simple, positive and quiet. Shipper shaft pinions and handle racking are eliminated. Crowd machinery is located on main deck rather than on boom — swing inertia is reduced, the operating cycle speeded up.

5. **QUICK CONVERTIBILITY** to dragline of the independent motor type. Hoist and drag functions are powered by separate motors, eliminating operating clutches and brakes.

10L54C

These features — plus many more — make Bucyrus-Eries the finest heavy-duty excavators ever built: yard for yard, dollar for dollar, pound for pound. Write today for complete information on the 4½-yd. 110-B, the 6-yd. 150-B, or the 8-yd. 190-B.

Bucyrus-Erie Company
SOUTH MILWAUKEE
WISCONSIN

TO ADVERTISE: All advertising in this section is payable in advance. Rate: $1.00 per line, or $12.00 per inch of 12 lines. Minimum charge $4.00. No discounts; no commissions. Please count your copy carefully to avoid delay. Each line contains 41 characters (34 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number, if blind advertisement is desired. Be sure to enclose the correct amount of money with your order. Closing date—15th of preceding month. Example: January closes December 15th.

TO INQUIRE: Be sure to address your inquiry to the advertiser by using the correct box number. Mail your letter in care of Excavating Engineer, South Milwaukee, Wisconsin. Write each advertiser a separate letter. Do not write us for name and address of advertiser. This information will not be given out. We have no information about the equipment advertised other than that shown in the advertisements themselves.

LARGE SHOVELS, CRANES, DRAGLINES — 2½ YDS. & UP

Page 625-S diesel walking dragline with 150 foot boom and 10 yard bucket; new in 1948; good operating condition; location Middle West.
Box 3555

P & H model 1400 electric shovel, equipped with 3½ cubic yard dipper, 48' boom, 34' dipper sticks, for 3 phase, 60 cycle, 4000 volt current; available immediately; excellent condition, reasonable price; located in Western Pennsylvania.
Box 3576

Lima "1201" dragline, serial #4116; 80' boom, 3 cu. yd. Page RH dragline bucket; powered by Cummins L-600 diesel engine, and equipped with Kohler Light Plant.

Marion model 40-A dragline, serial #8256; 89' boom, 3 cu. yd. Page bucket. Caterpillar model D-17000 diesel engine and Kohler Light Plant.

Manitowoc model "3000-A" high lift shovel, serial #3197; 35' boom, 27' dipper sticks, 1¼ cu. yd. dipper; powered by Cummins model NHIS-600 diesel engine and equipped with Kohler Light Plant.

Lima model "802" high lift shovel, serial #3145; 32' boom, 27' dipper sticks, 1¼ cu. yd. dipper; powered by Caterpillar model D-17000 diesel engine. The above machines are in good condition and reasonably priced. Contact Allison Engineering Co., Foxburg, Pennsylvania.

SMALL SHOVELS, CRANES, DRAGLINES — UP TO 2½ YDS.

S-2184 (B) Lorain model #77 1½ cu. yd. shovel with 1¼ cu. yd. Amsco bucket, Caterpillar diesel engine.
Sale Price FOB Louisville, Ky. $8000.

S-2311 (B) Shovel front attachment for model "E" Quick-Way, complete w/4/10 cu. yd. dipper; has been used very little.
Sale Price FOB Louisville, Ky. $1000.

S-444 (C) P&H model 255 (A) ¾ cu. yd. shovel, 18' boom, 13'6" turn dipper handle, chain crowd, tractor type crawler mounting w/20" pads, 11'1" O.A. length, 9'10" O.A. width; powered by Waukesha model MZA 86 HP 6 cyl. gasoline engine, size 4¼x4¼ 404 cu. in. displacement.
Sale Price FOB Evansville, Ind. $6950.

RS-2338 (B) Lima model 34 Paymaster ¾ cu. yd. dragshovel w/wide pipeline mounting and 34" flat pads, powered by General Motors 4-71R55 diesel engine.
Sale Price FOB Louisville, Ky. $9800.

S-427 (B) "Quick-Way" model J combination backhoe and dragline powered by International U-4 gasoline engine; unit mounted on Chevrolet 4x4 truck chassis; 4 wheel drive.
Sale Price F.O.B. Evansville, Ind. $3400.

Quick-Way dragline equipment consisting of std. 20 ft. boom, fairlead and ¼ cu. yd. dragbucket (never used).
Sale Price FOB Evansville, Ind. $400.

S-488 (B) Buckeye model 70 dragline with fully enclosed steel cab, crawler mounting 8'6" wide overall and 11'6" long overall with 22" treads; powered by Chrysler #91 industrial gasoline engine; equipped w/35' boom, fairleads and Hendrix type LS ¾ cu. yd. drag bucket.
Sale Price FOB Evansville, Ind. $4500.

S-2504 (C) Unit pull shovel model 1020, ¾ cu. yd. crawler mounted with one man partially enclosed steel cab, 24" pads and powered by General Motor 3-71 diesel engine.
Sale Price FOB Louisville, Ky. $8000.
Box 3580

¾ cu. yd. General clamshell machine, 35 ft. boom, Hercules WXCL-3 gasoline engine; 5 years old.

Michigan model 26-D ¾ cu. yd. truck shovel on Michigan single axle truck mounting, serial T-425, Waukesha model 6-BK-213-B, serial 441579, gasoline engine, also 25 foot crane boom, all in good operating condition. Stuart M. Christhilf & Co., Inc., 134-136 West Mt. Royal Ave., Baltimore 1, Maryland.

38-B serial number 72973 shovel and dragline with 45' boom, Caterpillar D13000 engine, 1½ yd. Bucyrus-Erie AX dragline bucket, 1¾ yd. Hendrix dragline bucket, very good condition, $30,000. P. C. Cochrane, York, South Carolina, phone: 218.

Bucyrus-Erie 43-B 1¾ yd. shovel and crane combination, 50' boom, Buda diesel engine; good operating condition. $17,750

Northwest model 25, ¾ yd. backhoe with GM diesel engine, 24" tracks. $7,500

Lorain 55 truck crane with 40' boom, clamshell lagging, Waukesha gas engine, mounted on 10-wheel pneumatic-tired Mack truck; operating condition. $4,000

Garwood model 625 scraper, 24.5 cu. yds. heaped capacity, on four 24.00x29 24 ply tires fair to good condition; cost new: $18,500
our price: $ 8,000

H. O. PENN MACHINERY CO., INC.
140th Street & East River
New York 54, New York
Mineola, L.I. Poughkeepsie, N.Y.
Newington, Conn.

80-D Northwest shovel, serial #8610, equipped with either standard dipper or a 3¼ or 3½ cubic yard coal loading dipper; this machine now working as coal loader and in A-1 condition; price: $29,500 f.o.b. cars New Lexington, Ohio.
Box 3556

Koehring 605 1½ cu. yd. shovel with Cat D13000 diesel, delivered new in September 1947; can furnish dragline or clamshell, if necessary; machine can be inspected, working now. Fuchs-Clayton Machinery Co., 901 So. 40th St., Omaha, Nebraska.

Bucyrus-Erie 38-B 1½ yd., new 1949, shovel and dragline 60' boom, $9800 shop job within last 60 days and over $1000 spare parts go with it; located in Spokane, Washington; will be shipped prepaid anywhere in the Northwest; this represents a very good buy; full price: $29,000. Intermountain Equipment Company, East 611 Sprague Avenue, Spokane 5, Wash.

Bay City model 45, ¾ cu. yd. shovel with a UD14A International engine, serial number UD14A-UDF36488, shovel serial number 2399; engine used approximately 300 hours; crawlers recently repinned; rollers recently rebushed; general appearance—good. Price: $6000.
Box 3578

1952 ½ yard Quick Way gas powered shovel, mounted on International ten wheel drive truck, with winch and equipped with hydraulic jack outriggers; shovel also includes back hoe attachment; all equipment in excellent condition, used less than a year; $8500; would consider selling shovel and attachments less truck if desired. Taskers' Artesian Well Contractors, Northwood, New Hampshire.

Michigan model T-K-6 heavy-duty truck crane in top condition; many extras including 35' boom, ⅜ yd. heavy-duty clamshell bucket, Rudomatic tagline reel, 1000 lb. extra counterweight, driver's cab, 1100x20 tires and backhoe attachment new; price with all attachments $6925 subject to prior sale. F.O.B. Alexandria, Virginia.
Box 3581

LIMA
604 SHOVEL
Shipped 1951—1¾ yd. Dipper
Diesel Powered
Excellent condition—
$30,000.00
H. O. Penn Machinery Co., Inc.
140th St. & East River
New York 54, N. Y.
Telephone CYpress 2-4800

Buckeye 160 heavy service ditcher complete with General Motors engine 471 diesel with 24¼" buckets and quick change rooters for 36" width of cut; digging depth 16'; machine delivered new 1954; used two months; priced to move. D. D. Kennedy, Inc., Attn: Don Kennedy, P. O. Box 177, Bellwood, Illinois.

Lorain model 95 dragline with 75' boom 2¼ yd. bucket, D-17000 Caterpillar diesel engine serial number 9309, fully enclosed steel cab recently installed.

Ransome 56S concrete mixer, complete with water batcher and batch meter; no motor.

Six concrete buckets, Blaw-Knox, 2 cu. yd. capacity, roll bottom. J. Ray McDermott & Co., Inc., Harvey, La.

75-B Lorain 1¼ cu. yd. shovel, long track, serial number R-799; rebuilt at factory 1939; equipped with D-13000 Cat diesel engine; operating everyday; located in Maryland.

Bucyrus-Erie 10-B shovel, serial number 12519 with gas engine, in very good condition; located in Maryland.
Box 3577

For sale or will rent at A.G.C. rental rates Bucyrus-Erie 54-B dragline, long and wide caterpillars, maximum 80' boom, Buda 1879 diesel engine, serial #50753; machine in excellent condition. Carveth Construction Co., Lincoln, Nebraska.

Lima 1201 combination shovel and dragline. Cummins diesel engine, 80' dragline boom. Location middle west; priced to sell. Box 3548

Bay City shovel, ¾ yd. bucket; model 45 serial number 2399; repowered in 1952 with new International diesel engine; machine purchased new in 1943; in good condition; price: $7500.
Box 3572

54-B serial no. 105918 less than one year old, five months actual operating time; equipped as standard shovel with 36" wide treads, excellent condition; price: $55,000 f.o.b. Charleston, West Virginia. Van Lott, Inc., Columbia, South Carolina, Phone: 38311.

MISCELLANEOUS EQUIPMENT

6 yard concrete batch plant with three 2 yd. Koehring mixers, Noble batcher, cement silos, etc.

5000 bbl. Robinson bolted cement silo, 275 bbl. per hour vertical cement elevator, Robinson cement pump, Fuller Kinyon pump.

20 ton cableway, traveling head and tail towers, maximum span 2700 feet, with concrete buckets, transfer car.

250 cu. yd. per hour Aggregate plant with 10x36 jaw crusher, 36" gyratory, screens, conveyor, sand classifier.

5000 ft. 30" Aggregate belt conveyor complete; self-propelled stacker.

Two D-8 tractors, two 80-D 2½ yd. Northwest dragshovels; 955A 2½ yd. P&H dragshovel; 604 1½ yd. Lima dragshovel; 25 ¾ yd. Northwest; Eimco 104 rocker shovel on D-4 chassis; two 27 FD Euclids, 7-9 yds. Portable compressors, pneumatic tools, welders, pumps, etc. The Consolidated Mining & Smelting Company of Canada Ltd. Chief Storekeeper, Trail, B.C. Canada.

Bucyrus-Erie shovel fronts: 10-B—¾ yd. 19-B—⅝ yd. 20-B—¾ yd. 22-B—¾ yd. For sale at reduced prices. R. S. Armstrong & Bro. Co., 676 Marietta Street, N.W., Atlanta, Georgia.

Equipment for Bucyrus-Erie 15-B: New dragshovel equipment (Unit 20A), price F.O.B. Milwaukee, Wis. $1,521.50. New Rudomatic tagline, price F.O.B. Milwaukee, Wis. $76.30.

Equipment for Bucyrus-Erie 22-B: New dragshovel equipment (Unit 20), price F.O.B. Milwaukee, Wis. $2060. Phone, wire or write: Nagle-Hart Tractor & Equipment Co., 212 S. Thornton Ave., Madison, Wis., Phone: 5-9447.

2½ yd. shovel front for model 54-B Bucyrus-Erie, price as is, Portsmount, Ohio: $2500. Bucket alone worth the price.

COAST EQUIPMENT COMPANY
444 Eighth Street San Francisco
MArket 1-5740

Eight 42-T Bucyrus-Erie blast hole drills, realistically priced; all machines are equipped with electrical equipment for operation on AC 3/60/440; no drilling tools are available, but the machines are provided with tool wrench for drilling 9" holes with tools with 3¼x4¼-7API joints; available also approximately $12,000 spare parts inventory. Direct inquiries to attention of: Mr. R. J. Hepburn, Purchasing Agent, The United Electric Coal Companies, Chicago 1, Illinois.

Two trucks, 17 yd. Rock Bed Dual hoist. Autocar model DC-20064-SN, 6 cylinder Cummins diesel, tandem drive, new 1951, excellent condition.

Gauge, drill stem 3½x4¼ box and pin 7 API thds. Bucyrus-Erie No. 10-281960, slightly used. $95. Basic Refractories, Inc., Maple Grove, Ohio.

Five slightly used, Goodyear 14 ply Hi Miler 12x20 tires; special reduced price: $125 each f.o.b. Erie, Pennsylvania. Box 3579

WANTED TO BUY

Wanted: A price on a 40', more or less, boom with a clamshell or dragline bucket; please give a list of prices on rebuilt, used as coded above. Julius Friedrich, 99 Friedrich Park, Rochester 21, New York.

POSITION WANTED

Superintendent available. 30 years experience and qualifications, covering all types of construction here listed; highways, airports, large sewers, water & gas lines, heavy and light excavating, know cost and modern equipment; honest sober and reliable; West, Middle-West or Southern location. Box 3554

Operator: Power shovels and other excavating equipment; A-1 mechanic; now located in Baltimore, Md.; will go anywhere. Box 3571

If you are Buying or Selling Used Equipment this is the place to let the Excavating Industry know about it.

Notes . . .

Continued from page 67

strong-Holland Pty. Ltd., of Sydney, Australia, has been licensed to manufacture its asphalt plants. The move will enable Australian concerns to make full use of modern American equipment in asphalt paving.

Wellman Engineering Co., Cleveland, O., has acquired the locomotive crane division and plant of The Browning Crane & Shovel Co. of Cleveland. Browning had been in the locomotive crane business since 1899, serving such fields as railway, shipbuilding, general construction, logging, steel mill, metal scrapyard, quarry, and mining industries. Wellman plans to manufacture the locomotive cranes in Cleveland. The locomotive crane organization will be known as the Wellman-Browning Locomotive Crane Division of The Wellman Engineering Company with headquarters at 7000 Central Ave. Browning Truck and Wagon Cranes will continue to be manufactured by The Browning Crane & Shovel Company.

Westinghouse Air Brake Co., Pittsburgh, Pa., has appointed Joe H. Serkowich, as director of advertising and publicity. Serkowich was formerly advertising manager of LeTourneau-Westinghouse Co., a Westinghouse subsidiary. In his newly created office, Serkowich will effect the coordination of advertising programs, sales promotion, and public relations of all the divisions and subsidiaries of Westinghouse Air Brake. Serkowich was graduated from the University of Illinois in 1936 and joined the advertising department of Caterpillar Tractor Co. After serving as a lieutenant colonel with armored units in Burma and China during World War II, he joined an industrial advertising agency in Peoria, Ill. In 1948, he became assistant advertising manager of R. G. LeTourneau, Inc. He was made advertising manager in 1950 and is currently serving LeTourneau-Westinghouse in that capacity. Under his leadership, the LeTourneau-Westinghouse advertising program received nationwide recognition, and in 1953 he was named "Industrial Advertising Man of the Year" by a nationally circulated publication . . . Lloyd A. Rager succeeds Serkowich as advertising manager for Le-Tourneau-Westinghouse. Rager formerly served as assistant advertising manager and sales promotion manager for the Westinghouse subsidiary. He has been with the company for 17 years.

Worthington Corp., Harrison, N. J., has announced a distributorship agreement was recently executed between its Plainfield Works and Chapman Machinery Co., Miami, Fla. Chapman services the counties of Highlands, Okeechobee, St. Lucie, Martin, Glades, Palm Beach, Hendry, Collier, Broward, Monroe, and Dade. It will distribute Worthington portable mixers, plaster or mortar mixers, building mixers, truck mixers, pneumatic concrete placers, and portable self-priming centrifugal pumps.

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THE NEW

150-HP CAT* DW15 TRACTOR

the answer to important earthmoving needs!

Do you need a fast, four-wheel tractor that can work effectively in narrow, confined areas, yet keep pace with larger units?

The DW15 is your answer! It has ten forward speeds up to 24 m.p.h. . . . up to 31.3 m.p.h. with optional gears. With matching scraper, it carries up to 15 cu. yds. per load at these speeds. It can maneuver in tight cut, fill or haul road situations.

Do you need a wheeled tractor with power and exceptional lugging ability?

The DW15 is your answer! Its new 150-HP diesel engine is matched to its weight and capacity. Its heavy-duty clutch and transmission match the engine. Engine, clutch and transmission are designed and built by one manufacturer.

Do you need a unit that will produce all day without exhausting operators?

The DW15 is your answer! The hydraulic booster makes steering easy . . . only eight pounds of steering effort are needed. Air-boosted flywheel clutch, constant-mesh transmission, large-capacity air brakes, anti-jackknife protection and a comfortable bucket-type seat with hydraulic snubber provide the operator with safe, easy operation.

Do you need a tractor that will give you a profitable day's production, day in and day out?

The DW15 is your answer! Designed and built by Caterpillar, it is available with a complete line of matched units . . . scrapers, bottom dump and side dump wagons.

Call your Caterpillar Dealer today. He'll give you complete details on this new high-production, high-speed earthmoving machine. He'll show you the DW15 in action.

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.

CATERPILLAR*

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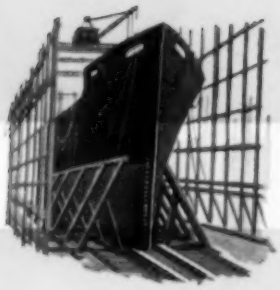

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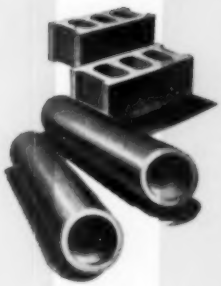

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Shell Rotella Oil fights one of the chief causes of engine parts wear. It eliminates cylinder and bearing pitting caused by acid residue from incomplete combustion and low jacket temperatures.

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